MITSUBISHI ELECTRIC

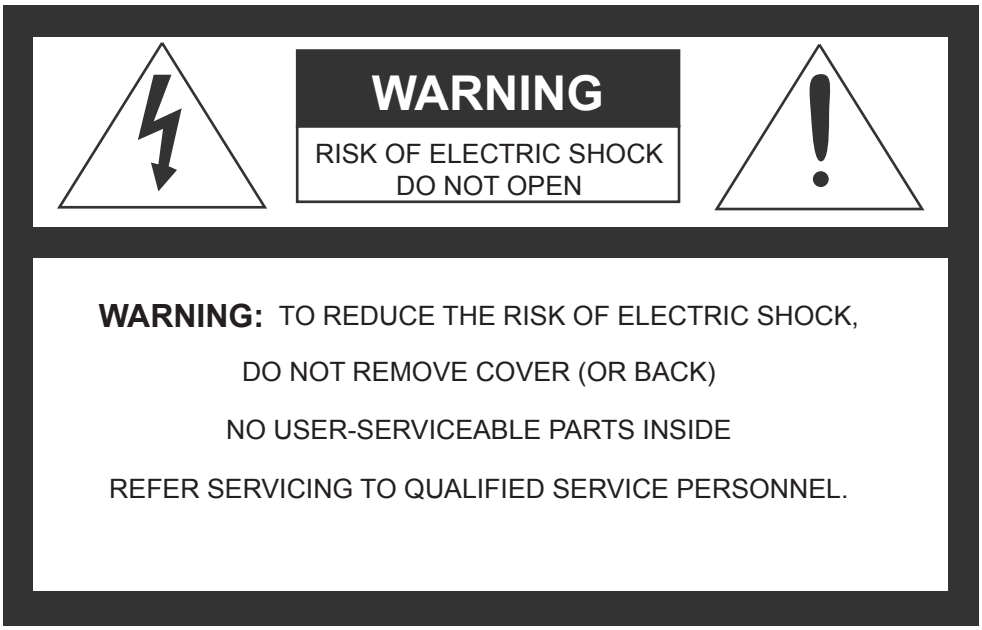
# DIGITAL RECORDER

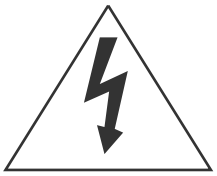
## INSTALLATION MANUAL

MODEL

# DX-TL5716U

THIS INSTRUCTION MANUAL IS IMPORTANT TO YOU. PLEASE READ IT BEFORE USING YOUR DIGITAL RECORDER.


WARNING
RISK OF ELECTRIC SHOCK
DO NOT OPEN
WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

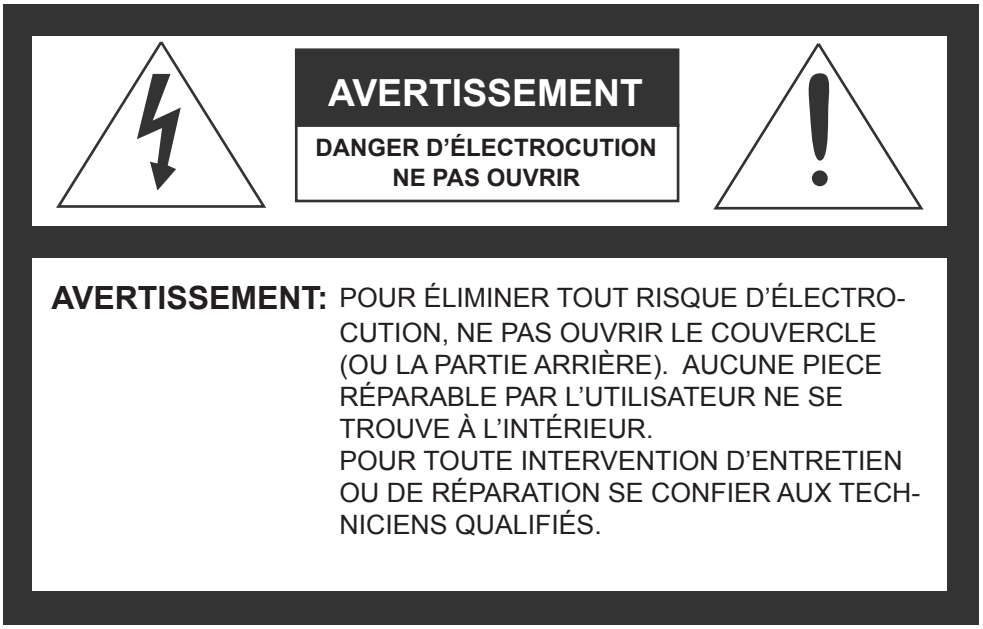
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

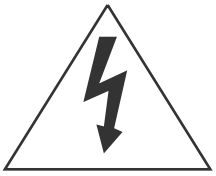
## WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

## CAUTION:

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.


AVERTISSEMENT
DANGER D'ÉLECTROCUTION
NE PAS OUVRIR
AVERTISSEMENT: POUR ÉLIMINER TOUT RISQUE D'ÉLECTRO-
CUTION, NE PAS OUVRIR LE COUVERCLE
(OU LA PARTIE ARRIÈRE). AUCUNE PIECE
RÉPARABLE PAR L'UTILISATEUR NE SE
TROUVE À L'INTÉRIEUR.
POUR TOUTE INTERVENTION D'ENTRETIEN
OU DE RÉPARATION SE CONFIER AUX TECH-
NICIENS QUALIFIÉS.



La flèche symbolisant l'éclair dans un triangle équilateral a pour objet de tirer l'attention de l'utilisateur sur le fait, qu' il y a des "tensions dangereuses" non-isolées à l'intérieur de l'enceinte du produit qui peuvent être suffisamment importantes pour conduire au risque d'électrocution.

Le point d'exclamation au sein d'un triangle équilateral a pour objet de tirer l'attention de l'utilisateur sur le fait qu' il y a des instructions de mise en service et d'entretien (de réparation) dans les fiches descriptives de l'appareil qui doivent obligatoirement être respectées.

## AVERTISSEMENT:

AFIN D'ÉVITER TOUT RISQUE D'INCENDIE OU D'ÉLECTROCUTION, NE PAS EXPOSER CET APPAREIL À LA PLUIE NI À L'HUMIDITÉ.

## ATTENTION:

POUR PRÉVENIR LES CHOCS ÉLECTRIQUES NE PAS UTILISER CETTE FICHE POLARISÉE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ÊTRE INSÉRÉES À FOND SANS EN LAISSER AUCUNE PARTIE À DÉCOUVERT.

# Important safeguards

PLEASE READ ALL THESE INSTRUCTIONS REGARDING YOUR RECORDER AND RETAIN FOR FUTURE REFERENCE. FOLLOW ALL WARNINGS AND INSTRUCTIONS MARKED ON THE RECORDER.

1. **Read Instructions**
   All the safety and operating instructions should be read before the appliance is operated.

2. **Retain Instructions**
   The safety and operating instructions should be retained for future reference.

3. **Heed Warnings**
   All warnings on the appliance and in the operating instructions should be adhered to.

4. **Follow Instructions**
   All operating and use instructions should be followed.

5. **Cleaning**
   Unplug this product from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

6. **Attachments**
   Do not use attachments not recommended by the product manufacturer as they may cause hazards.

7. **Water and Moisture**
   Do not use this product near water – for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.

8. **Accessories**
   Do not place the product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury. Any mounting of the appliance should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

   An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

9. **Ventilation**
   Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

10. **Power Sources**
    This product should be operated only from the type of power source indicated on the marking label. For products intended to operate from battery power, other sources, refer to the operating instructions.

11. **Grounding or Polarization**
    This product is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

12. **Power-Cord Protection**
    Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cord at plugs, convenience receptacles, and the point where they exit from the appliance.

13. **Lightning**
    For added protection for this product receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges.

14. **Overloading**
    Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

15. **Object and Liquid Entry**
    Never spill liquid of any kind on the product.

16. **Servicing**
Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

17. **Damage requiring Service**
Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
(a) When the power-supply cord or plug is damaged.
(b) If liquid has been spilled, or objects have fallen into the product.
(c) If the product has been exposed to rain or water.
(d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
(e) If the product has been dropped or the cabinet has been damaged.
(f) When the product exhibits a distinct change in performance, this indicates a need for service.

18. **Replacement Parts**
When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

19. **Safety Check**
Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in safe operating conditions.

20. **Heat**
The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that product heat.

21. **This equipment does not provide connection for used with outdoor or cable distribution systems.**

**NOTE**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE**

THIS CLASS A DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.

CET APPAREIL NUMÉRIQUE DE LA CLASSE A EST CONFORME À LA NORME NMB-003 DU CANADA.

## How to use this manual

### ♦ About this manual

The manual of this recorder consists of the following two manuals.

● **Installation Manual (this manual)**

This manual describes connections of devices as well as functional settings and operations to use this recorder.

This manual mainly describes operating procedures carried out by the mouse.

● **User's Manual**

This manual is for operators of this recorder and describes the operating procedures for the basic functions only.

### ♦ Symbols

Tips (Reference for operation)

Shows information to be referred to when you operate this recorder.

Notice (Point to be noted)

Shows information to be noted when you operate this recorder.

☞ (Reference page)

Shows the sections and pages to be referred to.

### ♦ Troubleshooting

See "Troubleshooting" (☞ pages 131 to 133) and take appropriate measures.

### ♦ How to locate information in this manual

You can find desired information in this manual using the following methods.

● **Table of contents → ☞ Pages 5 to 7**

● **Reference page → Shown in the texts.**

#### How to locate setting items

When you first set up the recorder, you can configure the minimum required settings using the Setup Wizard.

- Language setting
- Clock setting
- HDD operation setting
- Recording setting

When you configure these settings manually or configure other settings, find desired functions and pages describing those functions using the following methods.

● **Search based on the function you want to use**

See the table of contents (☞ pages 5 to 7).

● **Search for the setting method for the connected device**

See the reference pages shown by the descriptions of the devices in "Connections" (☞ page 24).

● **Search based on the items displayed on the screen**

See the reference pages shown by the descriptions of the displayed items in "Screen display" (☞ page 22).

● **Search from the quick menu list**

You can find the setup menus and recording setting menus as well as their setting items in the quick menu lists on ☞ pages 51 to 53 and pages 98 to 104.

In addition, you can find the factory default setting of each setting item, too.

Using these lists, you can keep records of your settings and review them later.

## Setup procedure

**Start here when you first set up the recorder.**

### 1 Connect the recorder.

Connect the cameras, monitors, and sensors to the recorder. Configure the settings of the connected devices referring to the reference pages shown in the descriptions of the devices in "Connections" on ☞ page 24.

### 2 Turn on the recorder.

Turn on the main switch on the rear of the recorder. After checking the ACCESS indicator goes out, press the POWER button on the front panel of the recorder.

### 3 Select whether or not to use the Setup Wizard.

When you turn on the recorder first time, the Setup Wizard is activated. ☞ "Setup Wizard" on pages 34 and 35.
Using the Setup Wizard, you can set the following items automatically according to the displayed menus.

- Language setting
  The language used for the menu screen is selected.
- Clock setting
- HDD configuration
  All the connected HDDs are registered as Main device. For details of the HDD configuration, see ☞ pages 36 to 39.
- Recording setting
  The settings for normal recording are configured. For details of the recording, see ☞ pages 48 to 59.

**When using the Setup Wizard**

### 4-1 Run the Setup Wizard.

Set the items shown above according to the displayed menus.

**(To change the settings made by the Setup Wizard)**

### 4-2 Change the settings made by the Setup Wizard.

**As needed**

To manually change the settings made by the Setup Wizard:

- Language setting ☞ Page 105
- Clock setting ☞ Page 105
- HDD configuration ☞ Pages 36 to 39
- Recording setup ☞ Pages 48 to 59

**When not using the Setup Wizard**

### 4 Make the minimum required settings manually.

- Language setting ☞ Page 105
- Clock setting ☞ Page 105
- HDD configuration ☞ Pages 36 to 39
- Recording setup ☞ Pages 48 to 59

**Start here when you change the settings of the recorder already set up.**

### 5 Make other settings.

**As needed**

Make the necessary settings according to your desired recording operation.
For example,

- To carry out timer recording. → Timer program setting ☞ pages 66 to 69
- To use the mirroring mode. → Mirroring setting ☞ page 37
- To control the recorder from the personal computer. → Communication setting ☞ pages 114 and 115
- To control the camera. → PTZ camera setting ☞ page 116
- To restrict the recorder's functions by the password lock. → Password setting ☞ pages 117 to 120
- To make settings of screen display and rear terminals. → Setup menu ☞ pages 98 to 116.

**How to search for necessary settings**
Refer to "How to locate setting items" on the left page, and find the pages describing the functions and settings you want to use and configure the necessary settings.

### 6 Check the setup condition.

By executing recording, playback, search, and copy, check that the recorder has been set up correctly.

# Major features

This digital recorder is able to record images captured by up to 16 surveillance cameras and audio received by up to 2 microphones to its hard disk. The recorder is equipped with the function to search for desired scenes by specifying the recording dates as well as the simultaneous recording/playback function that allows playback even during recording. In addition, using the split display function to display up to 16 camera images on one screen, you can view more than one monitored area at the same time. This recorder facilitates to configure a monitoring system for constant surveillance.

**Realizing long-term recording**

By reducing the size of recorded video data using the newly developed video compression engine (MEPG 4 system), the writing capacity of HDD can be saved about 50% (compared with our conventional models). In addition, this recorder is designed to connect external HDD to expand its HDD capacity up to 16 TB (when using optionally available DX-ZD6UE). Due to this, you can construct a long-term recording system to store data for 2 years, for example.

**Simple operation and USB mouse connectable**

By connecting a separately available USB mouse to the serial bus terminal on the recorder, you can easily control the recorder and setting menus. For frequently used functions such as search and copy, the simple operation menu allows you to operate them by simple procedure. This recorder is equipped with the on-screen help function. By clicking the help icon or pressing the HELP button, you can view various information such as operation procedures on the screen.

**DVD/CD drive for data copy integrated**

Immediately after retrieving important reference data, you can copy the data to DVD/CD discs (DVD-R/DVD-RW, CD-R/CD-RW) by the internal DVD/CD drive.

**"One touch copy" for easy copying with one button press**

The recorder is equipped with the function to copy still playback images to a USB memory device or DVD/CD disc with one button press. You can select still images or moving images to copy. When selecting moving images, you can specify the recording duration.

**XGA output terminal integrated**

You can connect a general PC display monitor to this terminal to use it as a surveillance monitor.

**Motion detection search function**

By designating certain areas such as doors and windows shown in recorded images as detection target areas, you can search for recorded data containing scenes having variation (or motion) in those areas and display the beginning of such data. This function is useful, for example, in searching for intruders into deserted places or scenes where someone painted graffiti on the wall.

**Personal information protection function**

By setting passwords, you can classify the recorder operations into 3 levels. You can set a password for deleting data from HDD to protect them from unauthorized access or to use this function as misuse prevention. The recorder is equipped with the function to prohibit playback of data recorded before the number of days you specify (auto expiration setting), which facilitates data management according to your operation standard regarding the data storage period.

**Alarm notification of intrusion and system errors**

When an alarm signal is input to the recorder from external body sensors or when an error is detected in the system, the recorder notifies the designated personal computer via TCP/IP command or e-mail. The recorder is also capable of transferring the alarm-recorded images that is triggered by an external alarm signal to the designated FTP server.

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# Caution and care

**HEAVY OBJECTS SHOULD NEVER BE PLACED ON THE UNIT (E.G., MONITOR)**

**NEVER TOUCH OR INSERT ANY OBJECT INSIDE THE UNIT**

Touching the inside of the cabinet or inserting foreign objects of any kind through the disc loading slot or ventilation holes not only creates a safety hazard but can also cause extensive damage.

**PROTECT THE POWER CORD**

Damage to the power cord may cause fire or shock hazard. If the power cord is damaged, turn OFF the MAIN switch and carefully unplug the cord by holding the main plug.
If this unit is moved with the power on status, the built-in HDD may be damaged. Confirm that more than one minute have passed since the power cord and the connecting cords were disconnected, then move this unit. Make sure to take the disc out and close the disc loading slot.

**UNPLUG THE POWER CORD DURING A LONG ABSENCE**

Turn off the power and unplug the power cord during a long absence.

**MAINTAIN GOOD VENTILATION**

Do not obstruct the many ventilation holes on the unit. For maximum ventilation, leave some space around the unit and place the unit on a hard level surface only, and ensure it is not covered during use. Heavy objects should never be placed on the unit.

**WHEN NOT IN USE**

When not in use, always eject the disc and turn OFF the MAIN switch.

**CABINET CARE**

Never use petroleum-based cleaners. Clean with a soft cloth moistened with soap and water and wipe dry.
PVC cables or leads should not be left in contact with the cabinet surface for long periods.

**INSTALLATION LOCATION**

For excellent performance and lasting reliability install in a location that is:-

1. Well ventilated, out of direct sunlight and away from direct heat.
2. A solid vibration-free surface.
3. Free from high humidity, excessive dust and away from magnetic fields.
4. Please ensure that the ventilation fan located on the unit's back panel is not blocked.

**UNSUITABLE LOCATIONS**

Placing the unit in the following places might shorten the product life:

- Extremely cold places, such as refrigerated warehouses and ice houses
- Places where excessive hydrogen sulfide is likely to be generated, such as hot-springs areas
- Places or locations with salt air environment.

**NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.**

**DO NOT PLACE HEAVY OBJECT ON THIS UNIT.**

**DO NOT STEP ONTO THIS UNIT.**

**DO NOT PLACE ANY OBJECTS IN FRONT OF THE DISC LOADING SLOT.**

The unit may drop or fall by losing its balance. It may cause injury or failure of the unit.

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE. THIS APPARATUS MUST BE GROUNDED.**

**WARNING:**

**The supplied power cord is used for 120 V only. Never connect to any outlet or power supply having a different voltage or frequency.**

## About the hard disk drive (HDD)

- This unit is equipped with HDD, which is a very delicate device. Therefore, handle this unit carefully.
- Don't expose this unit to vibrations and shocks. It may be damaged when exposed to vibrations and shocks especially during power-on or access to the HDD.
- Don't unplug the power cord during recording/playback or power-on.
- This unit is equipped with a system that automatically resumes and continues recording in the event of a minor failure in the HDD or other components during recording. However, depending on the type of a failure in the HDD, this unit may not able to continue recording. For early detection of failures, it is recommended to have this unit inspected every year.
- In the event of a fault in the HDD, replace it immediately. For replacement of the HDD, please contact your Mitsubishi dealer. (To replace the HDD, it is required to stop recording.)
- Use recommended HDD only. For HDD supported by this unit, please contact your Mitsubishi dealer.
- When the HDD is replaced, the recorded data are deleted. To ensure stable operation of this unit, the firmware may be updated from time to time. The recorded data may be deleted in such a case.
- When you dispose of or transfer this unit, handle the video data stored in HDD carefully and take all responsibilities related to the disposal or transfer.
- In the event of a failure in the HDD during normal recording or mirroring, this unit may not be able to resume recording after rebooted, depending on the failure condition.
- When you enable the mirroring function while the recorded data are stored in the HDD, the recorded data are deleted.
- When you delete the data, the recorded images cannot be played back any more.
- It is recommended to check regularly that the recorded data are played back correctly.

## Installation location and handling

- Before you first use this unit, supply power to it for at least 48 hours to charge the built-in backup battery so that the built-in power compensator circuit can be activated. When the battery isn't charged sufficiently, the built-in clock may go wrong or the unit may not able to recover in case of a power failure.
- Don't plug this unit and high current devices (such as copier and air conditioning) into the same wall socket.
- Place this unit on a level and stable surface. When it is used on an unstable surface, a failure may be caused.
- Don't remove the outer covering of this unit.
- Don't place this unit close to other devices. They may interfere with each other, disturbing video and audio.
- Don't place this unit on a heat source. In addition, don't place this unit near a heat source because this unit has ventilation openings in its sides and bottom. Otherwise the inside temperature may rise, causing a failure.
- When this unit is placed on or under the monitor, a failure may be caused, such as image disturbance and DVD/CD disc ejection failure.
- Don't place a strong magnetic object near this unit. It may affect the images adversely and cause loss of recorded data.
- Don't expose this unit to volatile substances such as insecticide or don't leave this unit in contact with rubber or plastic products for a long time. Otherwise the surface of the product may deteriorate or the coating may come off.
- When this unit is placed directly on the waxed floor, the adhesion may increase between the floor and the non-slip rubber pads on the bottom of the product, causing the floor coating to come off or be colored.
- The HDD and cooling fans are motor-driven parts. To ensure stable recording, it is recommended to replace them every 30,000 hours of use as a guide assuming that the ambient operating temperature is 25°C. When replacing HDD, also replace the vibration-proof rubbers at the screwed areas. (Note that this period is just for a guide of replacement interval and isn't intended to guarantee the lifetime of the parts. They may be broken earlier because of shocks applied to the product and ambient operating temperature.)
- Be sure to use this unit within the allowable ambient temperature range (5° to 40°C) and humidity range (80% or less). When you use the unit out of this temperature range, the internal parts may be adversely affected or a malfunction may occur. In addition, when the temperature rises high, the characteristics of the HDD may deteriorate or its lifetime may be shortened. When you use the unit in a low temperature environment, supply it with power for at least 10 minutes before use.
- Don't put your hand into the tray ejection opening. Your hand may be caught in by the tray, causing injury. If your hand should be caught in, don't try to pull it out forcefully. Turn the power off first, unplug the power cord, and contact your Mitsubishi dealer.
- Clean the product regularly to prevent the ventilation openings from being covered by dust.

## Precautions for rack-mounting

- When mounting this unit in a rack, ensure that the temperature inside the rack doesn't rise to 40°C or higher. When installing a rack, you are recommended to install fans to keep the temperature inside the rack 30°C or lower.
- Don't install a device that becomes hot under this unit. Otherwise the inside temperature may rise, causing a failure.
- Don't give a shock to all HDD devices in the rack.
- Before taking this unit in or out of the rack, be sure to turn off HDD devices being energized in the rack.
- Don't place this unit near a device that generates vibrations.

## Changing installation location

- When moving this unit, be sure to turn off the MAIN switch, make sure that the unit is completely stopped, and then unplug the power cord. When this unit is exposed to excessive shock while being energized, the internal electronic parts or HDD may be damaged. Be careful especially while the power indicator or access indicator is blinking.
- Don't move this unit for at least one minute after you turn off the power. Even after the power is turned off, the disc in the HDD keeps rotating by inertia for a while and the head is in an unstable state. This unit in such state is more vulnerable to vibrations and shocks than while being energized. Be careful not to give this unit even a slight shock for at least one minute after turning off the power. Wait at least one minute for the disc to stop, and then you can move the product.
- When moving this unit, cover it with shock absorbers to prevent shocks to the inside.
- When placing this unit on a floor, lay it gently on a soft mat or cloth.

## Maintenance

- Gently wipe dirt off the cabinet with a soft cloth.
- When dirt persists, clean it off using a cloth soaked in water-diluted neutral detergent and wrung well and then wipe dry.
- When using a chemical cleaning cloth, follow its instructions.
- Don't use solvent such as benzene and thinner. Otherwise the surface of the product may deteriorate or the coating may come off.

## Notes for constructing a surveillance system using this unit

- This unit can be controlled by external devices via the external connector, RS-232C connector, or LAN connector. In addition, external devices can be controlled via the external connector, RS422/485 connector, or RS-232C connector. These functions allow this unit to flexibly support an advanced security system. However, depending on the settings of this unit or connection or combination with external devices, this unit or externally connected devices may operate wrongly, causing adverse effects on the entire surveillance system.
- When constructing a surveillance system using this unit, you are recommended to check its operation by connecting or combining it with other devices in advance.
- Don't use the alarm function of this unit for the purpose of making serious decisions or for applications involving human lives.
- When this unit becomes unable to recognize an external device in recording because of a power failure, voltage drop, or other failure, the recording point may move to the HDD inside this unit or other HDD. To prevent such symptom, it is recommended to use an uninterrupted power supply or other similar device.
- When you unplug the power cord or turn off the breaker during recording, the HDD may be broken or recorded data may become unable to be played back. When you turn on and off the breaker every day, program the timer recording to be performed while the breaker is on and don't turn off the breaker during recording.
- When the user or any third party uses external devices wrongly, or external devices are affected by electric noise or they are damaged or repaired, the saved data may be lost. Mitsubishi doesn't take any responsibility for damages related to such data loss.
- By connecting external HDDs to this unit, you can expand the memory or use them as a copy device. However, when you perform recording, playback, or copy at a high rate using this unit, recording or playback data dropout or other failure may occur depending on the connected device because of slow data transfer or slow response. Be sure to check for such failure before starting the practical operation of the unit.
- Don't use the function to control the powers of external devices using the bus power of this unit.
- External devices you want to use may not be suitable for the intended application of this unit. For details, you are recommended to contact your Mitsubishi dealer.
- When connecting external devices, be sure to secure the connected cables using the supplied clamp bands. When the cables are disconnected or not connected firmly, the system may become unstable or images may not be recorded.
- Don't disconnect the cables while this unit is running. Otherwise a failure may be caused.

## For important recordings

- Be sure to perform test recording before starting the practical operation of this unit, and also check regularly that the recording is performed correctly according to the settings during the practical operation.
- Mitsubishi doesn't compensate for data not recorded or not played back correctly because of a failure occurring in this unit or connected devices during the use of this unit.
- As a preparation for unexpected breakdown or accident, you are recommended to make regular backups of important recordings. Though digital signals don't deteriorate, playback or recording may become impossible because of aging deterioration of discs depending on the storage conditions.

## About DVD/CD discs

- Don't use cracked discs, deformed discs, and discs repaired with adhesive. It may break up and scatter around during the use, causing breakdown or injury.
- When you hold the disc, don't touch the recording surface.
- When condensation occurs on the disc, wipe the moisture off the disc surface before use. Dirt on the disc surface such as fingerprints and dust may deteriorate the picture and audio quality. Gently wipe it off from the center toward the edge of the DVD/CD disc using a soft cloth. Don't use solvent such as benzene and thinner, record cleaner, and anti-static agents. Otherwise the disc is damaged.
- When dirt persists, clean it off using a cloth soaked in water-diluted neutral detergent and wrung well and then wipe dry.
- Don't use the following discs. Those discs may break or a failure may occur in the unit. (Recording or playback may not be performed correctly.)
  - Discs on which paper slips or stickers are placed, or scratched discs.
  - Discs from which labels are peeled off or on which excessive adhesive is present.
  - Cracked discs, deformed discs, or discs repaired with adhesive.
- After using discs, store them in their cases. Don't store discs in the following places:
  - Place where they are exposed to direct sunlight.
  - Place where there is much dust.
  - Place where the temperature and humidity are high.
- You cannot play DVD video discs that are commercially available or recorded with home DVD recorders. Only data recorded on this unit can be played back.
- Don't use discs used by a personal computer or other recorder or those used for unsuccessful copying or interrupted copying due to a power failure because they may cause malfunction. (Data recorded halfway may not be played back.) When copying to a CD-RW or DVD-RW disc is not done successfully, clear the data and then retry.
- With the special PC viewing/communication software, you can play data copied to a DVD or CD using this unit. However, it is not guaranteed that they can be played by all types of personal computer or DVD/CD drive.
- Mitsubishi doesn't compensate for data not recorded, copied, or played correctly because of a failure occurring in this unit or DVD/CD disc.
- DVD-R/-RW discs may not be recorded or played depending on their characteristics and conditions.
- When discs are broken, data recorded on them cannot be recovered.

## Maintenance of DVD/CD drive (laser pickup)

- Dust or dirt on the recording/playback lens causes image disturbance and sound skipping, making it impossible to perform recording or playback correctly. Ask your Mitsubishi dealer for cleaning.

  Don't use commercially available lens cleaning discs because they may damage the lens.
- The DVD/CD drive may be prone to have an error in recording or playback when its operating time for recording and playback exceeds 1000 hours.

CLASS 1 LASER PRODUCT

## Copyright

- This unit records data digitally. Therefore, exercise caution in recording video images protected by copyright.

## Recording time and product warranty

- Estimated recording time displayed on the menu screen is a continuous recordable time calculated in terms of the functional operation, not a product warranty period. In addition, they are not a warranty period of the operational reliability of the parts and components used in the unit.

## Motion detection function

- Motion detection function in this unit may malfunction depending on the input condition of the video signal. If you connect this unit to a system that issues an alarm using the motion detection function, take care to avoid such malfunction. When the motion detection function malfunctions, connect another sensor to the ALARM IN terminal on the rear of this unit.

## Supplied power cord

- The supplied power cord is designed for this unit only. Don't use this cord for other products.

## Network

- It is recommended to confirm with your network administrator about the network settings in advance.
- As this unit is operated through network, you may suffer from damage as follows.
  (1) Leakage or drain of information through this unit.
  (2) Unauthorized operation of this unit by malicious third parties.
  (3) Disturbance or deactivation of this unit by malicious third parties.
  To prevent damage listed above, take sufficient network security measures on your own responsibility.
- Set a network password that cannot be easily guessed by third parties. In addition, change the password regularly.

## Disclaimer

- Mitsubishi assumes no responsibility or makes no compensation for operation error of your surveillance system, loss of recorded data, or other damages or losses due to a failure in this unit. In no event will Mitsubishi repair, restore, or reproduce recorded data.
- In no event will Mitsubishi assume responsibility or liability for the following:
  (1) Disassembly, repair, or alteration of this unit by the user or installer.
  (2) Failure or breakdown in or damage to this unit resulting from misuse or careless handling by the user or installer.
  (3) Inconvenience or damages resulting from inability to display or record images or to operate the unit's functions correctly due to any reason or cause including breakdown or failure in this unit.
  (4) Failure in this unit due to combination with other equipment manufactured by a third party, or inconvenience or damages resulting from such failure.
  (5) Inconvenience, damages, or claims arising out of breakdown in this unit or loss of recorded video data due to replacement of the built-in HDD by the user or installer.
  (6) Inconvenience or damages arising out of breakdown in this unit or inability to display or record images due to natural disaster including earthquake and storm.
  (7) Inconvenience, damages, or claims arising out of breakdown in the built-in HDD or loss of recorded video data due to impact or vibration or environmental factors such as temperature at the installation site.
  (8) Demand for damages or claim of infringement of privacy on the ground that the video monitored or recorded by the user become public or are used for any purpose other than surveillance for whatever reason.
  (9) Incidental, special, or consequential damages arising directly or indirectly related to this unit.
  (10) Failure caused by any program created based on the command data provided by Mitsubishi, or inconvenience, damages, or losses resulting from such failure.
- This unit is intended for recording and playback of video monitored by cameras. Mitsubishi doesn't assure that this unit is capable of preventing crimes.

## Open source software

Thank you for purchasing Mitsubishi digital recorder DX-TL5716U (hereinafter referred to as “Product”). Before using this Product, please be sure to read the Software License Agreement on page 11 of the user's manual with regard to the software contained in this Product (hereinafter referred to as “Licensed Software”). **By using this Product, you are agreeing to be bound by the terms and conditions of the Software License Agreement.**

This Product contains software programs that are covered by GNU General Public License or GNU Lesser General Public License. Such software programs are excluded from Licensed Software and not covered by the Software License Agreement. For the terms and conditions for use of the software programs covered by GNU General Public License or GNU Lesser General Public License, please see “Notice about software to which GNU GPL/LGPL is applied”*.

In addition, this Product contains “Apache” and “OpenSSL (including “Original SSLeay” library).” These software programs are also excluded from Licensed Software and not covered by the Software License Agreement. For the terms and conditions for use of these software programs, please see “Notice about Apache software”* and “Notice about OpenSSL software”*.

Other open source software contained in this product is excluded from Licensed Software and not covered by the Software License Agreement. For the terms and conditions for use of these software programs, please see “Notice about other open source software”*.

* The documents of “Notice about software to which GNU GPL/LGPL is applied,” “Notice about Apache software,” “Notice about OpenSSL software,” and “Notice about other open source software” are contained (in the format of electronic files as notice_GPL_LGPL_ja.pdf, notice_Apache_ja.pdf, notice_OpenSSL_ja.pdf, and notice_other_ja.pdf) in the “OpenSoft_License” folder in the CD supplied with this Product.

## MPEG-4 patent

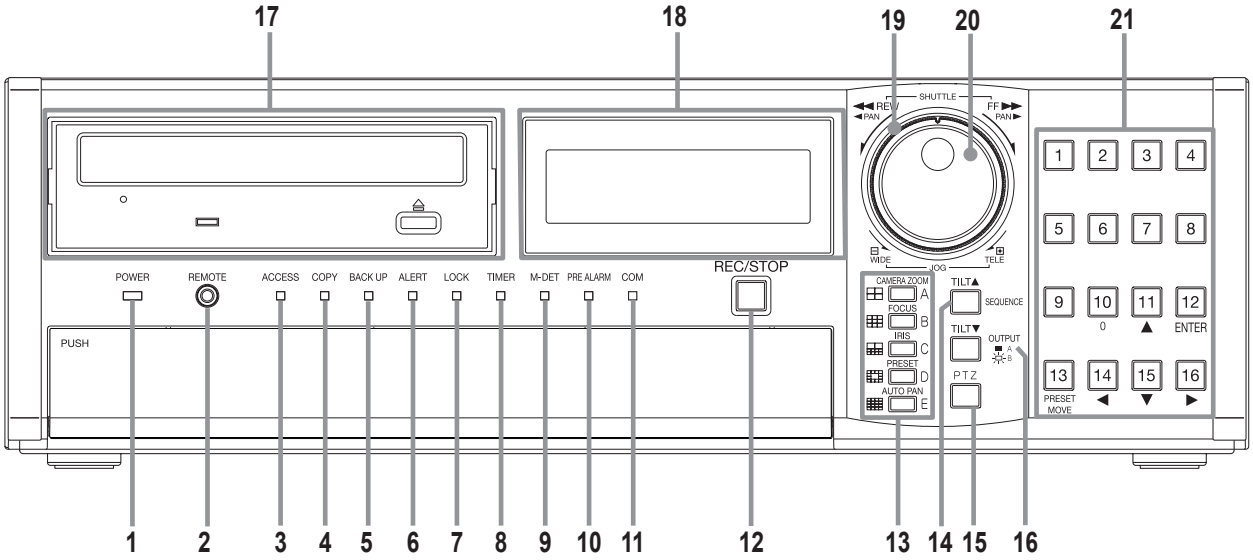
This Product is licensed under the MPEG-4 pool license only for the purpose of personal and non-commercial use involving the following activities:

(1) Encoding video in compliance with the MPEG-4 visual standard ("MPEG-4 Video").

(2) Decoding MPEG-4 Video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed by MPEG LA to provide MPEG-4 Video. For more information, visit http://www.mpegla.com.

(3) Playback of video recorded by the recorder using a personal computer in which the PC viewing/communication software or the OCX software for Web browser is installed, or playback of video recorded by the recorder using a Web browser.

## Front view




**1 POWER indicator**

When the POWER button is pressed while the MAIN switch on the rear of this recorder is ON, this indicator illuminates. When this recorder is in the standby status or the MAIN switch on the rear of this recorder is OFF, this indicator goes out. It takes about 1 to 2 minutes for this recorder to be ready for operation after the POWER button is pressed. When this recorder is in the process of operation transition such as startup, this indicator blinks and other operations are not acceptable.

**2 REMOTE jack**

Jack to connect the remote control unit (optional).

**3 ACCESS indicator**

This indicator illuminates when this recorder is accessing the internal HDD or externally connected devices. Before pressing the POWER button, wait until the indicator goes out and "POWER OFF" is displayed on the LCD.

**4 COPY indicator**

This indicator illuminates during copy. It blinks at the start and end of copy operation.

**5 BACK UP indicator**

This indicator illuminates during archive. It blinks at the start and end of archive operation.

**6 ALERT indicator**

This indicator blinks when the recorder notifies an important event such as an error occurring in it.

**7 LOCK indicator**

This indicator illuminates while the simple lock or the password lock is enabled.

**8 TIMER indicator**

This indicator illuminates while this recorder is in the timer recording mode or timer recording standby mode. It blinks when an error is found in the timer program.

**9 M-DET indicator**

This indicator illuminates while the motion detection function is enabled. It blinks during motion detection recording.

**10 PRE ALARM indicator**

This indicator illuminates when the pre-alarm recording or pre-emergency recording is enabled.

**11 COM (COMMUNICATION) indicator**

This indicator illuminates when this recorder starts communicating via LAN.

**12 REC/STOP button**

When this button is pressed, this recorder starts recording and the button illuminates. When this button is held down for 2 seconds or longer, this recorder stops recording and the button goes out.

When this button is held down for 2 seconds or longer during alarm recording or emergency recording, this recorder stops recording. This recorder does not stop recording during timer recording even when this button is held down.

**13 SPLIT button (⊞, ⊞, ⊞, ⊞, ⊞)**

When this button is pressed, the screen displays in the selected split display mode.

**C to E buttons**

These buttons are used to set the menus.

### Camera control buttons

When this recorder is in the PTZ mode during single screen display, you can control the cameras by pressing the following buttons. Press the PTZ button first, and then press one of the following buttons.

**CAMERA ZOOM button**

Press this button to adjust the camera zoom. Press this button and then turn the JOG to the left (wide) or right (tele) to adjust the camera zoom.

**FOCUS button**

Press this button to adjust the camera focus. Press this button and then turn the JOG to the left (far) or right (near) to adjust the camera focus.

**IRIS button**

Press this button to adjust the camera iris. Press this button and then turn the JOG to the left (close) or right (open) to adjust the camera iris.

**PRESET button**

Up to 48 monitored positions can be preset. Within 10 seconds after pressing this button, specify the preset number (01 to 48) to register the position using the camera number buttons (0 to 9).

For example, to register preset number 1, press the camera number buttons 0 and 1 in order, and to register preset number 48, press 4 and 8 in order.

**AUTO PAN button**

Press this button to activate the auto-pan function of the camera.

### 14 SEQUENCE button

Press this button to automatically switch images from cameras. The button illuminates during sequential display.

### TILT ▲ button

When this button is pressed during the PTZ mode, the camera tilts upward.

### 15 PTZ (pan/tilt/zoom) button

When this button is pressed, the PTZ mode to control the connected PTZ camera is activated and the button illuminates.

### 16 OUTPUT A/B button

When this button is pressed, the multiplexer output is switched between A and B.

The button goes out when A is selected and it illuminates when B is selected. While the multiplexer output B is selected, the menus are not displayed.

### TILT ▼ button

When this button is pressed during the PTZ mode, the camera tilts downward.

### 17 Disc tray

Insert a DVD/CD to copy recorded data.

Supported discs are DVD-RW, DVD-R, CD-R, and CD-RW.

### OPEN/CLOSE ⏏ button

This button is used to open or close the disc tray. Do not press this button while the BUSY indicator is illuminating or blinking.

### BUSY indicator

This indicator illuminates or blinks during recording or playback.

### 18 LCD

The current time and the recorder's status are displayed.

### 19 SHUTTLE ring

Use this ring to adjust the playback speed, and to rewind or forward the recorded images.

It is also used to pan the camera.

### 20 JOG dial

Use this dial for frame-by-frame playback.

Use it to control the PTZ camera, too.

### 21 Camera number buttons (1 to 16)

Press these buttons to display images from the cameras connected to this recorder. The number of button corresponds to that of the CAMERA IN connector on the rear of this recorder. The button corresponding to the camera you are viewing illuminates.

These buttons are also used to register preset positions to control PTZ cameras.

In addition, they are used to input passwords.

### ENTER button (Camera number button 12)

This button is used to designate the detection target areas of the motion detection function.

It is also used to accept the menu settings.

### PRESET MOVE button (Camera number button 13)

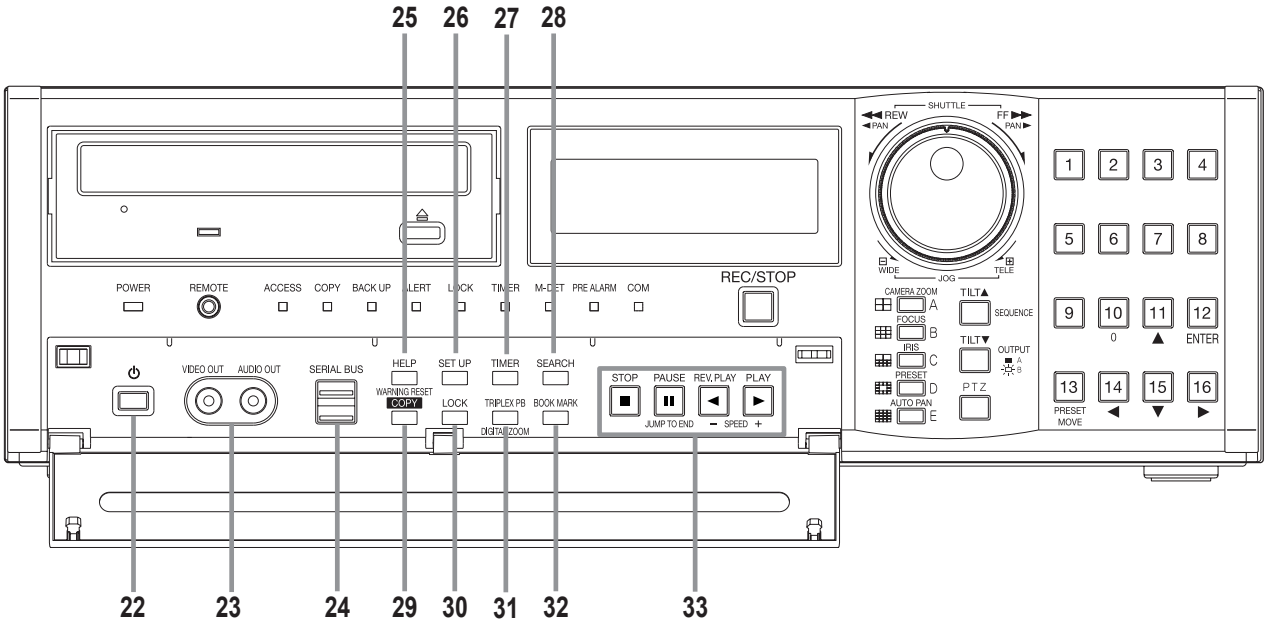
Use this button to shift the camera to the registered preset position. Within 10 seconds after pressing this button, specify the number of your desired preset position (01 to 48) using the camera number buttons (0 to 9).

### Direction buttons (Camera number buttons 11, 14, 15 and 16)

Use these buttons to move the item to be set during menu setting.

These buttons are also used to move the magnification center point while enlarging an image.

## Front view (inside of door)




### 22 POWER button

The power is turned on when this button is pressed while the MAIN switch on the rear is ON. When this button is pressed again, this recorder enters the standby mode. When this recorder is in the process of operation transition such as startup, the POWER indicator blinks and other operations are not acceptable.

### 23 Analog output connectors

**VIDEO OUT connector**

RCA connector to output video signals. The same image as that from OUTPUT A is output.

**AUDIO OUTPUT connector**

RCA connector to output audio signals. The audio of the selected channel is output.

### 24 SERIAL BUS ports

Input and output ports to connect a device equipped with serial bus terminal. Bus power cannot be used.

### 25 HELP button

When this button is pressed, the help menu showing information such as cautions on use, operating procedures, and functional descriptions is displayed.
It is also used to display the warning.

**WARNING RESET button**

When this button is pressed while a warning is displayed, the warning display is cleared.

### 26 SET UP button

When this button is pressed, <Main menu> is displayed.

### 27 TIMER button

When this button is pressed, this recorder enters the timer recording mode or standby mode and the TIMER indicator illuminates. When this button is held down for 2 seconds or longer, the timer recording mode or standby mode is canceled and the TIMER indicator goes out.

### 28 SEARCH button

When this button is pressed, <Search menu> is displayed. Use this button to search images. (☞ Pages 72 to 76)

### 29 COPY button

When this button is pressed, <Copy menu> is displayed. Use this button to copy or archive data. (☞ Pages 80 to 83)

### 30 LOCK button

When this button is pressed while the MAIN switch on the rear is ON, this recorder enters the simple lock or password lock mode. While this recorder is locked, the indicator illuminates. You can set passwords using <Password> of <Main menu> (☞ pages 117 to 120).

### 31 TRIPLEX PB button

When this button is pressed while live images from cameras are being displayed in the split display mode, the playback image of your desired camera can be displayed. Triplex playback is possible with Output A only.

### DIGITAL ZOOM button

When this button is pressed in the single screen display mode or the single screen playback mode, the displayed image is enlarged. To move the magnification center point, press the camera number button (11, 14, 15 or 16).

### 32 BOOK MARK button

When this button is pressed, <Bookmark menu> is displayed. When the playback device is designated as Copy device, Archive device, or preliminary area, <Bookmark menu> is not displayed. (☞ Page 79)

### 33 Operation buttons

**STOP button**

Press this button to stop playback.

**PAUSE/JUMP TO END button**

When this button is pressed during playback, still image playback starts and the button illuminates. When this button is pressed again, playback starts and the button goes out. When you press this button during shuttle playback, the playback continues at the then playback speed even when you release the shuttle. (Shuttle hold)

When the PAUSE/JUMP TO END button is pressed while the playback is stopped, images around the end of the latest recorded data are played back in the still image playback mode. (End point search)

**REV.PLAY button**

When this button is pressed, this recorder starts reverse playback and the button illuminates.

**PLAY button**

When this button is pressed, this recorder starts playback and the button illuminates.

**SPEED (+ and -) buttons**

When the playback (+) button or reverse playback (-) button is pressed during playback or reverse playback, the playback rate is changed.

## Inserting or removing DVD/CD disc

**Step 1 Press the OPEN/CLOSE button.**

- The disc tray opens.

**[To insert the disc]**

**Step 2-1 Place the disc on the tray.**

- Place the disc to the proper position with the label side up.

**[To remove the disc]**

**Step 2-2 Remove the disc.**

**Step 3 Press the OPEN/CLOSE button.**

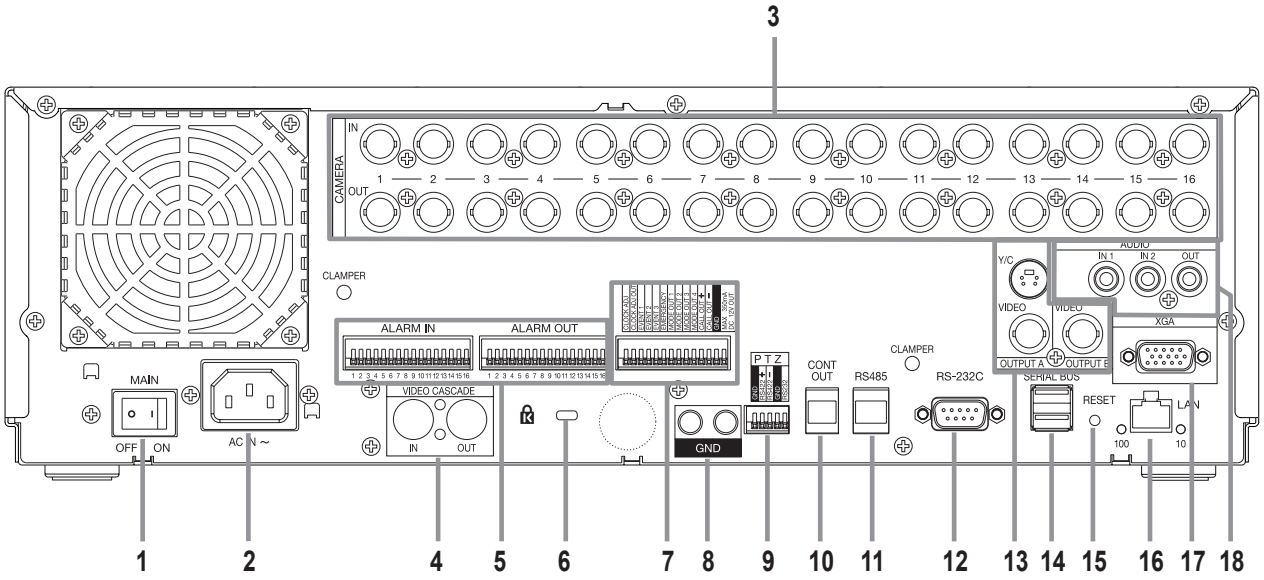
- The disc tray closes.

**Notice**

- Before you use a disc, read the cautions and instructions on its use given in its manual.
- Do not remove the disc during copy, during saving/loading menus, or immediately after inserting the disc. The disc or data may be damaged.
- Use recommended discs. Data may not be written or read properly when you use discs other than recommend.

  For usable discs, contact your dealer.
- When you use used DVD-RW or CD-RW, first delete the data from it using [Data clear]. (☞ Page 122)
- With the special PC viewing/communication software, you can play data copied to a DVD or CD using this recorder. However, it is not guaranteed that they can be played by all types of personal computer or DVD/CD drive.
- To play on the personal computer, check whether the DVD/CD drive on the personal computer supports the media to be used. To play on the personal computer, you are recommended to use the DVD-multi drive.
- When you cannot remove the disc, stop recording, turn off the MAIN switch on the rear panel of the recorder, and then turn on the power again.

## Rear view




### 1 MAIN switch

This is the main power switch. To use this recorder, set this switch to ON. Otherwise, the POWER button on the front panel of the recorder cannot turn on or off the recorder.

### 2 AC power socket

Use this socket to connect the supplied power cord. Earth terminal is used for safety. Insert the power cord of this recorder to the 100 to 240 V outlet with ground terminal.

**Notice**

- When the power outlet does not have an earth terminal, ask your dealer for grounding work (for pay). Never connect the ground terminal of the power cord to the gas pipe, water pipe, conductor rod and so on.
- Make sure to use the supplied power cord.

### 3 CAMERA connectors

**Notice**

- Do not connect superimposed voltage cameras because they can cause damage to the recorder.

**CAMERA IN connectors**

BNC connectors to input camera video signals.

**CAMERA OUT connectors**

BNC connectors to output camera video signals.
When the MAIN switch is on, the camera video signals input to CAMERA IN connectors are looped out to these connectors.

### 4 VIDEO CASCADE terminals

**VIDEO CASCADE IN terminal**

Video input terminal to cascade this recorder.

**VIDEO CASCADE OUT terminal**

Video output terminal to cascade this recorder.

### 5 ALARM IN terminals

Terminals to input alarm signals. These terminals accept alarm signals once a second. However, when multiple signals are input at the same time, not all the signals may be accepted.

**ALARM OUT terminals**

Terminals to output alarm signals. These terminals output signals for about 2 seconds when the connected sensors receive alarm or motion detection signals.

**Notice**

- The ALARM OUT terminal may output a signal for several seconds when the MAIN switch on the rear panel of the recorder is turned on or the recorder recovers from a power failure.

### 6 Keyhole for antitheft lock

This is a hole to connect a commercially available antitheft cable manufactured by Kensington.

### 7 I/O terminals

**CLOCK ADJ terminal**

Input terminal to adjust the time of the built-in clock. When this terminal receives a CLOCK ADJ signal, the clock is set or changed to the nearest hour (00 minute 00 second).

**Notice**

- When the CLOCK ADJ terminal on the rear panel of the recorder is grounded, the date and time is set to the nearest hour (00 minute 00 second). For example, when the clock of this recorder is 11:29:59, it is adjusted to 11:00:00, and when the clock is 11:30:00, it is adjusted to 12:00:00.

**CLOCK ADJ OUT terminal**
Terminal to output the signal to set the clocks of other recorders to the nearest hour (00 minute 00 second) in sync with input of CLOCK ADJ.

Notice

- The CLOCK ADJ OUT terminal may output the signal for several seconds when the MAIN switch on the rear panel of the recorder is turned on or the recorder recovers from a power failure. When the recorders are cascade-connected, the clock of the recorder connected in the next stage may be adjusted.

**EVENT terminals (1 to 3)**
Input terminals for activate the function configured in the <Event terminal> menu. (☞ Page 108)

**EMERGENCY terminal**
Input terminal to start emergency recording forcibly.

**MODE OUT terminals (1 to 4)**
Output terminals to notify the current recorder status. Select the status information to be output in the <Mode-out • Remaining capacity> menu (☞ page 107).

Notice

- The MODE OUT terminal may output a signal for several seconds when the MAIN switch on the rear panel of the recorder is turned on or the recorder recovers from a power failure.

**CALL OUT (+) terminal / CALL OUT (-) terminal**
Output terminal to notify the trouble in the recorder and its exclusive ground terminal (isolation terminal). Information to be externally output consists of items selectable in the <Warning display • Buzzer • Call-out> menu (☞ pages 105 and 106) and items to be output regardless of the menu settings.

Notice

- The CALL OUT terminal may output the signal for several seconds when the MAIN switch on the rear panel of the recorder is turned on or the recorder recovers from a power failure. Pay attention to this matter if you use peripheral devices to issue notification.

**GND terminal**
This terminal is used as common ground terminal.

**DC 12V OUT terminal**
This terminal outputs the direct voltage only when both the MAIN switch and the POWER button are on. The maximum electric current is 350 mA.

### 8 GND terminals
This terminal is used as common ground terminal.

### 9 PTZ control terminals
These terminals are used to connect a PTZ camera to control (pan, tilt and zoom) it.

### 10 CONT OUT connector
Connector to connect optionally available HDD extension unit DX-ZD6UE. This terminal is used to link the power supply of this recorder with the HDD extension unit.

### 11 RS485 connector
Connector to control this recorder remotely.

### 12 RS-232C connector
This connector is used to connect a host device equipped with RS-232C connector (such as a personal computer). This recorder can be controlled from other devices via this connector.

### 13 VIDEO OUTPUT connectors
**OUTPUT A VIDEO connector**
BNC connector to output video signals to the monitor.

**OUTPUT A S(Y/C) connector**
Connector to output brightness signals and color signals separately for higher picture quality. Signals can be output from this terminal and the OUTPUT A VIDEO connector simultaneously.

**OUTPUT B VIDEO connector**
BNC connector to output video signals to the second (B) monitor. (☞ Page 24)

### 14 SERIAL BUS ports
Input and output ports to connect a device equipped with serial bus terminal. Don't use the function to control the powers of external devices using the bus power of this recorder. Bus power cannot be used.
By connecting external HDDs to this recorder, you can expand the memory or use them as a copy device. However, when you perform recording, playback, or copy at a high rate using this recorder, recording or playback data dropout or other failure may occur because of slow data transfer or slow response. Be sure to check for such failure before starting the practical operation of the recorder.

### 15 RESET button
When this button is pressed, this recorder is reset and the power is turned off. In this case, image data, menu settings, and the clock setting are retained.

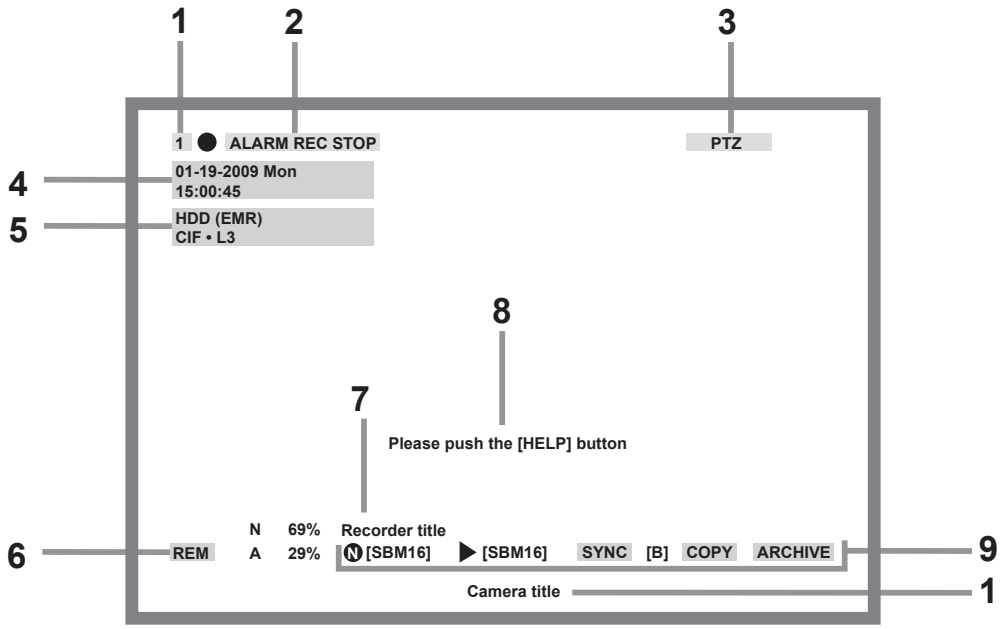
### 16 LAN port
Port for communication with the special application software using a web browser.

### 17 XGA port
Port to output video signals to XGA monitor.

### 18 AUDIO connectors
**AUDIO IN connector (1 to 2)**
RCA connector to input audio signals.

**AUDIO OUT connector**
RCA connector to output audio signals. The audio of the selected channel is output.

## Screen display




**Notice**

- The above figure is an example for explanation. Some items may not be displayed simultaneously.

### 1 Camera number/Camera title

A camera number or camera title is displayed.
● is displayed on the right side of the camera number during recording. (When you select to hide the camera number, it is not displayed.)
For setting the items to be displayed, see ☞ page 108.
For setting the camera title, see ☞ page 109.
For setting the camera number display position, see ☞ page 109.

### 2 Alarm input prohibition

When alarm input is prohibited, this indication appears.
For alarm input prohibition, see ☞ page 65.

### 3 PTZ indication

When PTZ mode is selected, this indication appears.
For PTZ, see ☞ pages 45 and 46.

### 4 Clock

The present time is displayed. The recording time is displayed during playback.
For setting the clock, see ☞ page 105.
For setting the display position and display mode of the clock, see ☞ page 108.

### 5 Playback information

The playback device, picture size, and picture quality are displayed during playback.
When the playback rate is changed, ▶□□FPS or ◀□□ FPS is displayed. (□□ shows the number of frames.) ☞ Page 78
▶▶□ or ◀◀□ is displayed during shuttle viewing or direct shuttle viewing. (□ shows the number indicating the level of the playback speed.) ☞ Page 77
[▶▶Hi-SPEED] or [◀◀Hi-SPEED] is displayed during super high-speed playback.
The displayed items are different in the single screen display mode and the split screen display mode.
For switching the playback device, see ☞ page 70.
For the picture size, see ☞ page 55.
For the picture quality, see ☞ page 56.

### 6 Remaining capacity

The remaining capacity of the selected device is displayed. When the remaining capacity of the registered device decreases to the predetermined level, "REM" is displayed.
N ..... HDD (Normal)
A ..... HDD (Alarm)
E ..... HDD (Emergency)
AR... HDD (Archive)
For setting the device to be displayed and the remaining capacity, see ☞ page 107.

### 7 Recorder title

The designated recorder title is displayed.
For setting the recorder title and displaying/hiding the title, see ☞ page 108.

### 8 Warning

Warning is displayed when a failure or error occurs in this recorder. Press the HELP button to check the details.
For setting the warning indication, see ☞ pages 105 and 106.
For warnings, see ☞ pages 135 to 137.

### 9 Operation status

The current operation mode of this recorder or devices being operated are displayed.

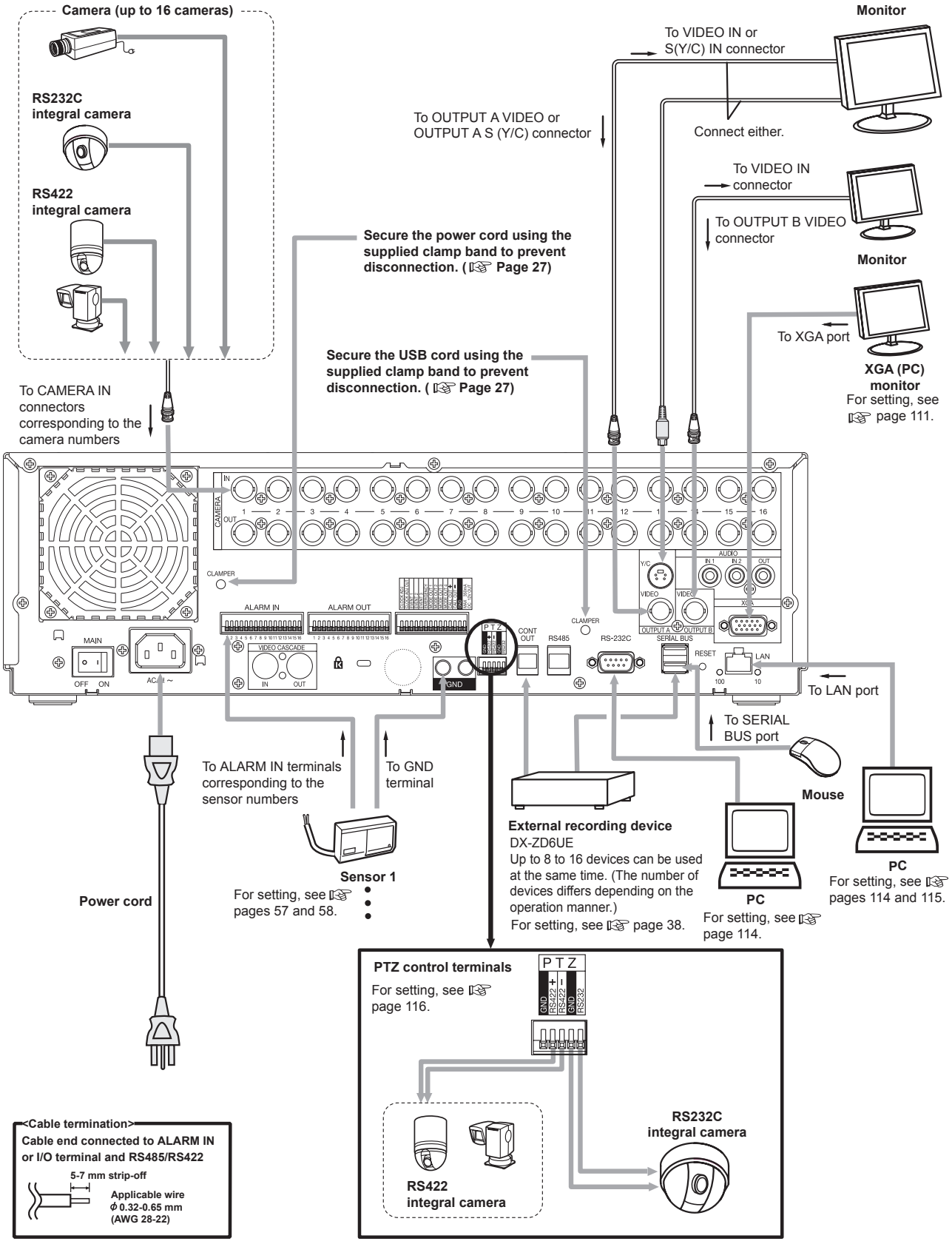
| Indication | Operation status |
|---|---|
| Ⓝ | Normal recording |
| Ⓐ | Alarm recording |
| Ⓔ | Emergency recording |
| ▶ | Playback |
| SYNC | Synchronizing (*) |
| COPY | Copying |
| ARCHIVE | Archiving |

(*): The copy destination HDD is displayed during synchronization. (Displayed only when synchronizing with the internal HDD. When synchronizing with the external HDD, this indication does not appear.)

| Indication | Device being operated | |
|---|---|---|
| [A] | Main recording device | Internal HDD A |
| [B] | | Internal HDD B |
| [SBM01] - [SBM16] | | External HDD |
| [SBC01] | Copy device | External HDD |
| [SBC17] | | DVD/CD |
| [SBC18] | | USB memory |
| [SBB01] - [SBB16] | Archive device | External HDD |

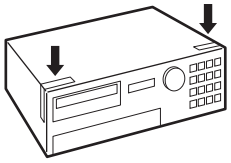
For displaying or hiding the operation status and HDD being operated, see ☞ page 108.

## Connecting CCTV cameras, monitors, and sensors


Camera (up to 16 cameras)
RS232C integral camera
RS422 integral camera
Monitor
To VIDEO IN or S(Y/C) IN connector
To OUTPUT A VIDEO or OUTPUT A S (Y/C) connector
Connect either.
To VIDEO IN connector
To OUTPUT B VIDEO connector
Monitor
Secure the power cord using the supplied clamp band to prevent disconnection. ( Page 27)
To XGA port
XGA (PC) monitor
For setting, see page 111.
Secure the USB cord using the supplied clamp band to prevent disconnection. ( Page 27)
To CAMERA IN connectors corresponding to the camera numbers
To LAN port
To SERIAL BUS port
To ALARM IN terminals corresponding to the sensor numbers
To GND terminal
Mouse
Sensor 1
For setting, see pages 57 and 58.
External recording device
DX-ZD6UE
Up to 8 to 16 devices can be used at the same time. (The number of devices differs depending on the operation manner.)
For setting, see page 38.
PC
For setting, see page 114.
PC
For setting, see pages 114 and 115.
Power cord
PTZ control terminals
For setting, see page 116.
RS232C integral camera
RS422 integral camera
<Cable termination>
Cable end connected to ALARM IN or I/O terminal and RS485/RS422
5-7 mm strip-off
Applicable wire
ϕ 0.32-0.65 mm
(AWG 28-22)

Notice

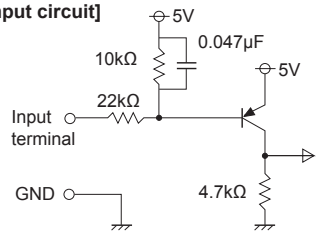
- Before connecting, remove the protection tape from both sides of the recorder.



- By connecting various devices, you can control this recorder by external devices and control external devices by this recorder. However, depending on the operating condition of the recorder, its operation and control of external devices may become slow or unstable.
- Select a USB hub supporting USB 2.0. Depending on the type of the USB hub you use, when a USB 2.0 device and a USB 1.1 device are connected, both of them may operate according to the USB 1.1 standard. Avoid using such USB hub.
- Before connecting external devices, turn off the MAIN switch of the recorder. After the completion of connection, turn on the powers of the external devices first and then turn on the MAIN switch of the recorder.

**EMERGENCY/ALARM IN/EVENT 1-3/CLOCK ADJ input terminals**

**[Input circuit]**

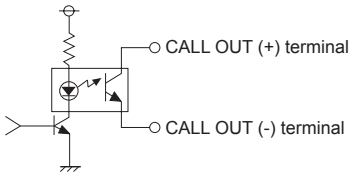



<Recorder's internal circuit>

**[Input conditions]** Grounding for 200 ms or longer
**[Input interval]** At least 1 second
**[Specifications]** When operating: Short-circuited to GND terminal or L-level voltage is applied.
When not operating: Open

**CALL OUT output terminal**

**[Output circuit]**



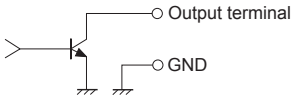

<Recorder's internal circuit>

**[Specifications]** Warning alarm signal (Photocoupler output)
When operating: Short
Max. allowable input current is 7 mA DC.
When not operating: Open
Max. allowable input voltage is +24 V DC.

* The terminal may output a signal for several seconds when the MAIN switch on the rear panel of the recorder is turned on or the recorder recovers from a power failure.

**ALARM OUT/MODE OUT 1-4/CLOCK ADJ output terminals**

**[Output circuit]**



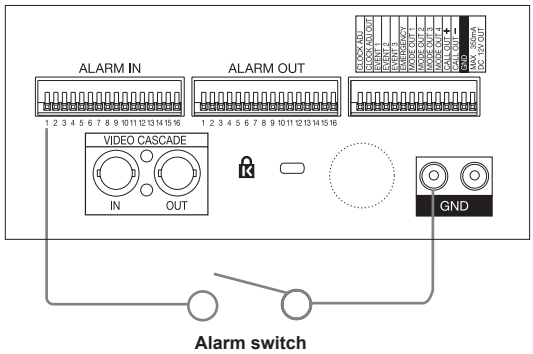

<Recorder's internal circuit>

**[Specifications]** When operating: L-level voltage is output.
Max. allowable input current is 30 mA DC.
When not operating: Open
Max. allowable input voltage is +24 V DC.

* Use the recorder within the ratings shown above.
* The terminal may output a signal for several seconds when the MAIN switch on the rear panel of the recorder is turned on or the recorder recovers from a power failure.

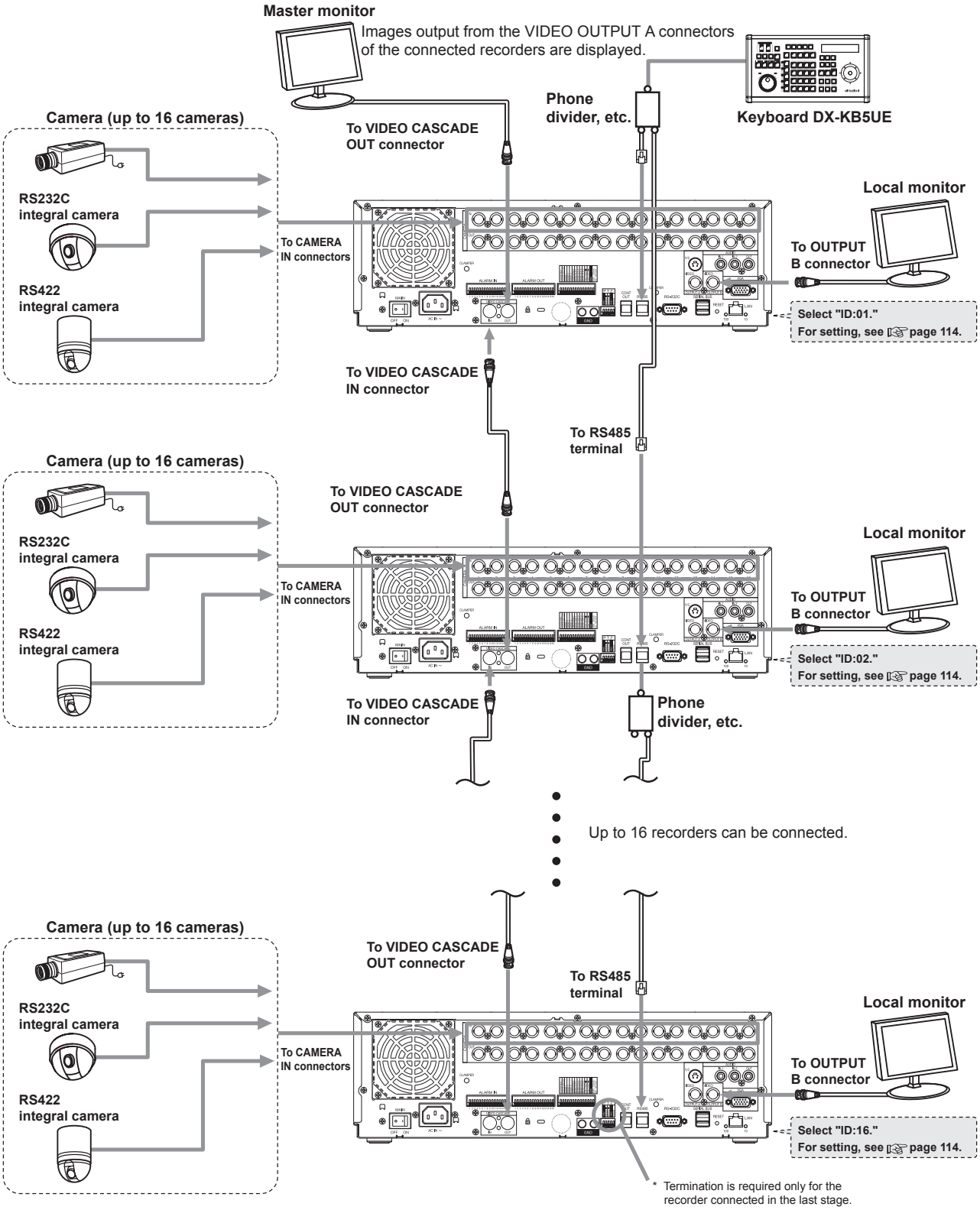
## Connection for alarm recording

Following figure shows an example of the connection of alarm signal corresponding to alarm sensor 1.




**Alarm switch**

## Cascade connection


Master monitor
Images output from the VIDEO OUTPUT A connectors of the connected recorders are displayed.
Phone divider, etc.
Keyboard DX-KB5UE
Camera (up to 16 cameras)
To VIDEO CASCADE OUT connector
RS232C integral camera
RS422 integral camera
To CAMERA IN connectors
Local monitor
To OUTPUT B connector
Select "ID:01."
For setting, see page 114.
To VIDEO CASCADE IN connector
To RS485 terminal
Camera (up to 16 cameras)
To VIDEO CASCADE OUT connector
RS232C integral camera
RS422 integral camera
To CAMERA IN connectors
Local monitor
To OUTPUT B connector
Select "ID:02."
For setting, see page 114.
To VIDEO CASCADE IN connector
Phone divider, etc.
Up to 16 recorders can be connected.
Camera (up to 16 cameras)
To VIDEO CASCADE OUT connector
To RS485 terminal
RS232C integral camera
RS422 integral camera
To CAMERA IN connectors
Local monitor
To OUTPUT B connector
Select "ID:16."
For setting, see page 114.
* Termination is required only for the recorder connected in the last stage.

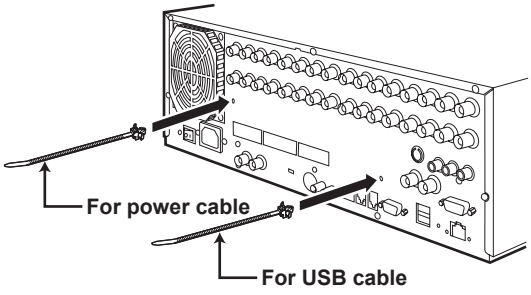
**Notice**

- By connecting various devices, you can control this recorder by external devices and control external devices by this recorder. However, depending on the operating condition of the recorder, its operation and control of external devices may become slow or unstable.

## Cable clamping

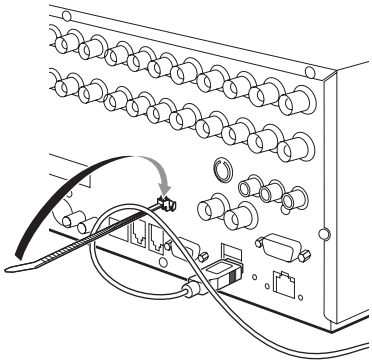
**Step 1 Insert the supplied clamp bands into the clamp holes in the rear of the recorder.**

- One clamp hole is for the power cable and the other is for USB cables.

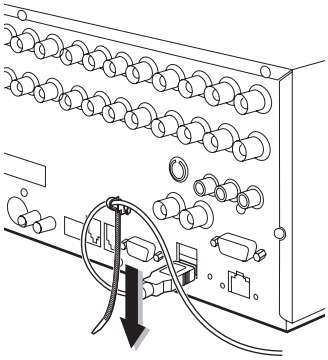



**Step 2 Run the cable to be clamped around the clamp band as shown in the figure.**

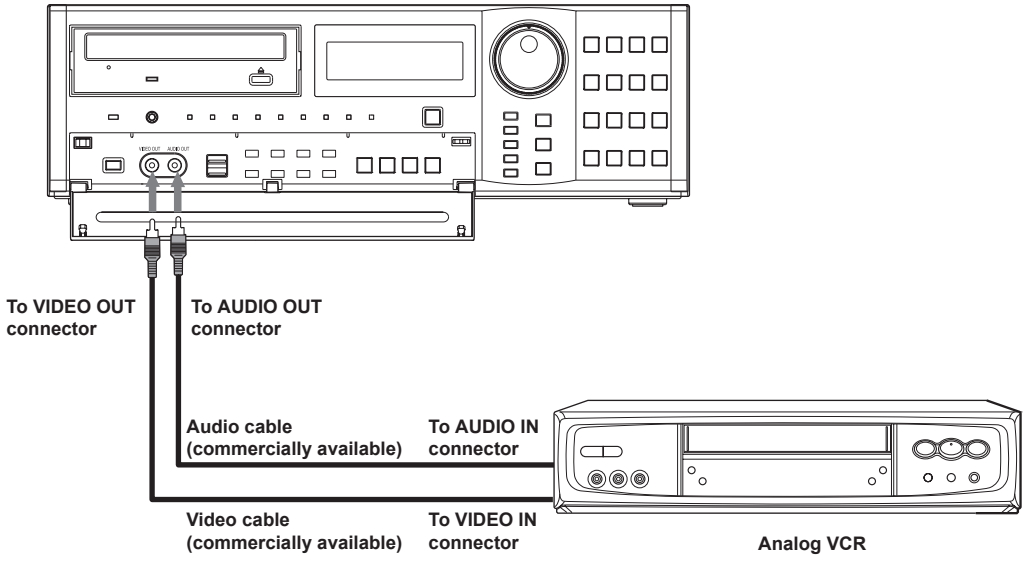
- The rough side of the band should face up.



**Step 3 Pull the end of the clamp band until it is tightened.**



## Connecting an analog VCR



## Optional products

**DX-ZD6UE**
**DX-ZD5UE(Z)**

Additional hard disk unit (for serial bus connection)

By connecting external HDDs to this unit, you can expand the memory or use them as a copy device. However, when you perform recording, playback, or copy at a high rate using this unit, recording or playback data dropout or other failure may occur depending on the connected device because of slow data transfer or slow response. Be sure to check for such failure before starting the practical operation of the recorder.

Don't use the function to control the powers of external devices using the bus power of this recorder.

When using DX-ZD6UE, you can use the mirroring and spanning functions.

**DX-RM5(ZD)**

Rack-mount adapter for additional hard disk unit DX-ZD6UE/DX-ZD5UE(Z)

**DX-R25**

Remote control unit

For PTZ-related functions, contact your dealer.

**DX-KB5UE**

Keyboard for digital recorder

**DX-RM4**

Rack-mount adapter for digital recorder

## Recommended products

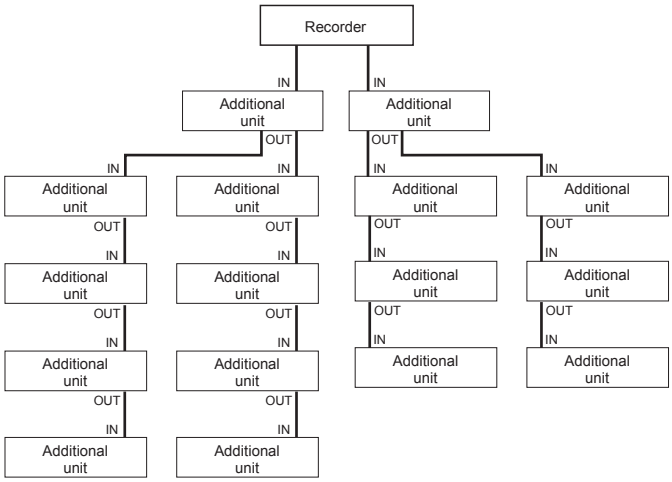
For recommended external devices, contact your dealer.

External devices you want to use may not be suitable for the intended application of this recorder. For details, you are recommended to contact your dealer.

## Caution for connecting additional hard disk units

When you connect 5 or more additional hard disk units to this recorder, you are recommended to connect them by USB cables as shown below in order to prevent recognition failure caused by variation in their startup time.

At the commencement of practical operation, check that they are recognized correctly even when a small number of units are connected.




**Notice**

- When you play back data stored in the extension unit during recording to the same extension unit at a rate close to the recorder's maximum processing capacity (for example, at 15 FPS for all the cameras in the 2CIF picture size), noise may appear in the image or audio. In addition, when you make backups of the data to the extension unit during recording on the recorder, make sure to set the total recording rate of cameras to half or less of the upper limit of the designated picture size (4CIF: 60 FPS or less, 2CIF: 120 FPS or less, or CIF: 240 FPS or less).

# How to set the menus

You can set the operation conditions and perform various controls using the menus.

There are 3 methods to set the menus as described below.

■ **Set the menus automatically (☞ Pages 34 and 35)**

When you turn on the recorder for the first time, the Setup Wizard screen is displayed and you can configure the minimum required settings according to the displayed menus.

■ **Set the menus manually**

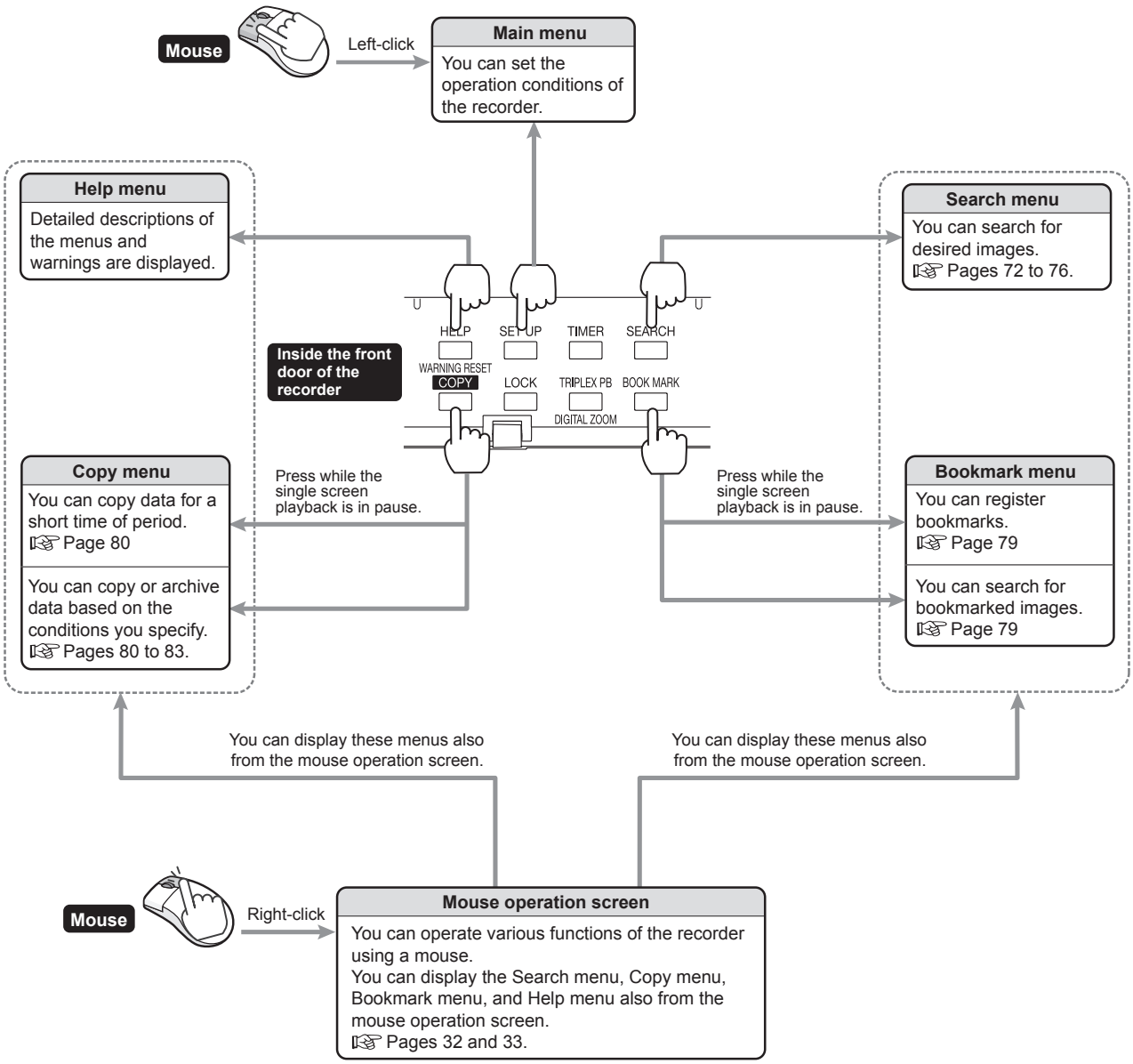
You can manually change the settings made by the Setup Wizard or manually configure settings other than those made by the Setup Wizard. For how to locate setting items, see ☞ page 2.

■ **Copy the menu settings of other DX-TL5716U (☞ Page 113)**

You can set the recorder's menus by copying the menu settings of other DX-TL5716U to externally connected media and then loading those settings.

## Displaying the menus

When you press the following buttons, the corresponding menus are displayed. (Check that no other menus or warnings are displayed.)


Mouse
Left-click
Main menu
You can set the operation conditions of the recorder.
Help menu
Detailed descriptions of the menus and warnings are displayed.
Search menu
You can search for desired images.
☞ Pages 72 to 76.
Inside the front door of the recorder
HELP
SET UP
TIMER
SEARCH
WARNING RESET
COPY
LOCK
TRIPLEX PB
BOOK MARK
DIGITAL ZOOM
Copy menu
You can copy data for a short time of period.
☞ Page 80
You can copy or archive data based on the conditions you specify.
☞ Pages 80 to 83.
Press while the single screen playback is in pause.
Press while the single screen playback is in pause.
Bookmark menu
You can register bookmarks.
☞ Page 79
You can search for bookmarked images.
☞ Page 79
You can display these menus also from the mouse operation screen.
You can display these menus also from the mouse operation screen.
Mouse
Right-click
Mouse operation screen
You can operate various functions of the recorder using a mouse.
You can display the Search menu, Copy menu, Bookmark menu, and Help menu also from the mouse operation screen.
☞ Pages 32 and 33.

**Notice**

- When the multiplexer Output B is selected, menus cannot be displayed. In addition, when you operate the recorder by a mouse, the mouse cursor is displayed but no menus are displayed and you cannot configure the menu settings. You can set the menus only when Output A is selected. (☞ Page 43)

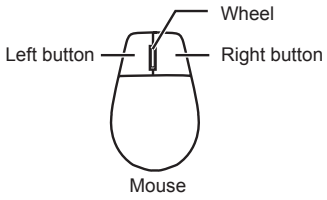
## Operating the menus

You can operate the displayed menu by pressing the buttons on the front panel of the recorder or clicking the buttons displayed on the menu screens.

**Notice**

- Use a general USB mouse having two buttons as shown by the figure. Certain types of mouse cannot be used with this recorder.

  You are recommended to use a mouse having 800 dpi resolution.
- Mouse is not supplied with the recorder.
- Mouse wheel doesn't work with this recorder.




| | Buttons on the screen | Examples | Descriptions |
|---|---|---|---|
| **To set parameters.** | | 1 High , etc | When you click on the button, the parameter or number displayed on the button changes. Left-click or right-click repeatedly until the desired item is displayed. |
| | (Disabled) (Enabled) | | Click the radio button of the desired parameter. |
| | (Disabled) (Enabled) | | Select the checkbox of the desired parameter to put a checkmark. |
| **To switch the selected item in the list.** | | 10 100 , etc | You can go to the next item. For example, by pressing the [ 10 △ ] button, you can skip next 10 items.<br>In addition, this button is used to change the setting values. |
| | | ▽ ▽ , etc<br>10 100 | You can go back to the previous item. For example, by pressing the [ ▽ 10 ] button, you can skip back previous 10 items.<br>In addition, this button is used to change the setting values. |
| | | | You can scroll lists.<br>Click on △ or ▽.<br>You cannot scroll lists using the buttons on the front panel of the recorder. |
| **To display other menus.** | | E:Return , etc | The previous menu is displayed. |
| | | D:Next Setting , etc | The next menu is displayed. |
| **To display the Help menu.** | ? | | Help menu is displayed, showing information such as operation procedures. This menu is also displayed when you press the HELP button on the front panel of the recorder. |
| **To accept the menu settings.** | | E:Return<br>D:Next Setting , etc | When you set a desired item and then display other menu by [Return] or [Next], the setting you made is determined. |

**Tips**

- To set the menus using the buttons on the front panel of the recorder

  You can select a setting item using the direction buttons (camera number buttons 11, 14, 15, and 16) and determine the setting using the ENTER button (camera number button 12).

  Instead of the buttons showing letter C, D, or E, such as [D:Next], displayed on the screen, you can use the button C, D, or E (SPLIT button) on the front panel of the recorder.

## Closing the menus

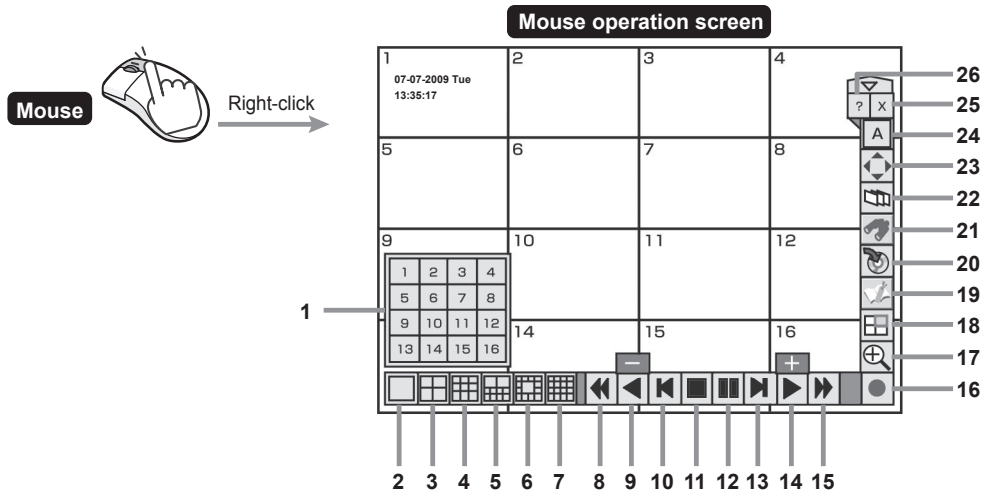
**Step 1 Display the Main, Search, Copy, or Bookmark menu and left-click the [Exit] button.**

**Notice**

- You cannot close the menus by pressing the SET UP button on the recorder.

## Using the mouse operation screen

When you right-click the mouse, the mouse operation screen is displayed and you can control the recorder on the screen.




**1 Camera number buttons**
When you click any of these buttons, the image from the corresponding camera is displayed on the entire screen. These buttons are used in the triplex playback mode, too. While the camera number buttons are displayed, the other buttons don't work.

**2 Single screen button**
When you click this button, the camera number buttons are displayed for 3 seconds.

**3 4-split button**
Each time you click this button, the screen mode changes in the order of 4-split a → 4-split b → 4-split c → 4-split d → 4-split a → ...

**4 9-split button**
Each time you click this button, the screen mode changes in the order of 9-split a → 9-split b → 9-split a → ...

**5 10-split button**
Each time you click this button, the screen mode changes in the order of 10-split a → 10-split b → 10-split a → ...

**6 13-split button**
Each time you click this button, the screen mode changes in the order of 13-split a → 13-split b → 13-split a → ...

**7 16-split button**
When you click this button, a 16-split screen is displayed.

**8 Reverse search button**
Each time you click this button during reverse playback, the button illuminates and the playback speed changes in the order of approx. X2 → approx. X4 → approx. X8 → approx. X16 → high-speed playback → approx. X2 → ...

**9 Reverse play button**
When you click this button, reverse playback starts.
When you click the button during playback or reverse playback, images are played or reverse-played at the lowest rate and [-] is displayed on the button. Each time you click the [Play] button while [-] is displayed, the playback speed increases.

**10 Reverse step button**
When you click this button, reverse frame-by-frame playback starts.

**11 Stop button**
When you click this button, playback stops.

**12 Pause button**
When you click this button during playback, the still image playback mode starts. By clicking this button again, playback resumes.
When this button is pressed while the playback is stopped, images around the end of the latest recorded data are played back in the still image playback mode.

**13 Step button**
When you click this button, frame-by-frame playback starts.

**14 Play button**
When you click this button, playback starts.
When you click the button during playback or reverse playback, images are played or reverse-played at the highest rate and [+] is displayed on the button. Each time you click the [Reverse play] button while [+] is displayed, the playback speed decreases.

**15 Forward search button**
Each time you click this button during playback, the button illuminates and the playback speed changes in the order of approx. X2 → approx. X4 → approx. X8 → approx. X16 → high-speed playback → approx. X2 → ...

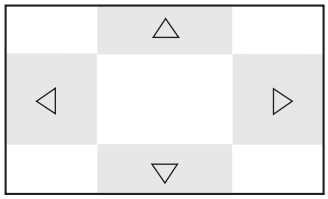
**16 Recording/Stop button**

When you click this button, recording starts and the button illuminates. By clicking this button again, a confirmation screen is displayed. When you select [Yes], recording stops and the button goes out.

**17 Zoom button**

When you click this button during single screen display or single screen playback, the displayed image is enlarged. Each time you click this button, the magnification changed in the order of X1 → X2 → X4 → normal display. You cannot enlarge the image output from Output B using the mouse operation screen.

To move the magnification center point, click the shaded areas shown below.



**18 Triplex PB button**

When you click this button while live image is displayed in the split display mode, the triplex playback mode is activated and the camera number buttons are displayed for 3 seconds. When you click any camera number button, the playback image of the corresponding camera is displayed. For notes for using the triplex playback mode, see ☞ page 44.

**19 Bookmark button**

When you click this button, the mouse operation screen is closed and the <Bookmark menu> is displayed. When the playback device is designated as Copy device, Archive device, or preliminary area, the <Bookmark menu> is not displayed. (☞ Page 79)

**20 Copy button**

When you click this button, the mouse operation screen is closed and the <Copy menu> is displayed. Use this button to copy or archive data. (☞ Pages 80 to 83)

**21 Search button**

When you click this button, the mouse operation screen is closed and the <Search menu> is displayed. Use this button to search images. (☞ Pages 72 to 76)

**22 Sequence button**

When you click this button, the sequential display screen is displayed and the button illuminates. By clicking the button again, the sequential display is canceled.

**23 PTZ button**

When you click this button while live images are displayed, the recorder enters the PTZ mode. For operations in the PTZ mode, see ☞ pages 45 and 46.

**24 Output A/B button**

When you click this button, the multiplexer output is switched between A and B. Each time you click this button, the multiplexer-related buttons are switched between two monitors connected to the OUTPUT A connector and OUTPUT B connector.

When Output B is selected, only the buttons for controlling the multiplexer are displayed.

**25 Exit button**

When you click this button, the mouse operation screen is closed.

**26 Help button**

When you click the button, the Help menu is displayed.

**Notice**

- When you click the ⌃ button, the hidden buttons are displayed. To hide the buttons being displayed, click the ⌄ button.
- When the password lock is enabled, you can use the buttons for unlocked operations only. (☞ Pages 117 to 120)
- The mouse operation screen automatically disappears when you don't operate the mouse for 1 minute.
- You cannot display warnings by pressing the HELP button when they occur while the mouse operation screen is displayed. Close the mouse operation screen first.
- In forward search/reverse search, the intended playback speed may not be obtained when a heavy load is imposed on the recorder or when the high-speed data transmission is unavailable due to the use of a DVD/CD, USB memory, or external HDD.

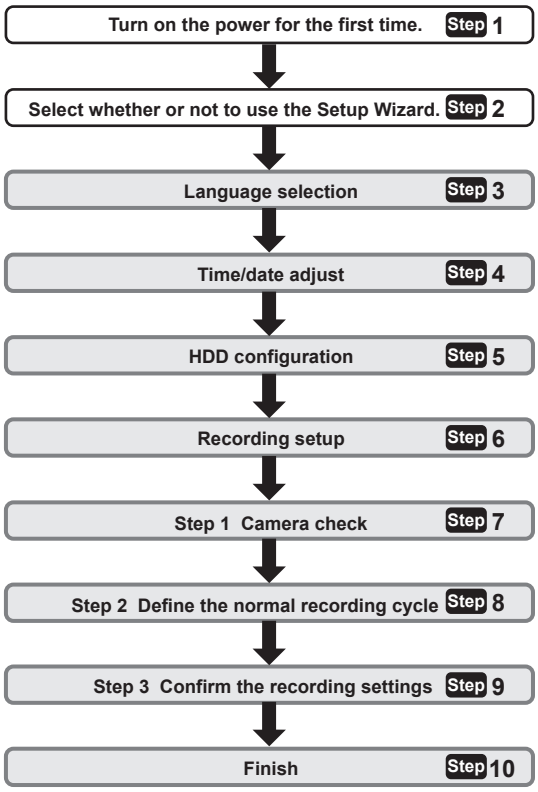
## Making the minimum required settings automatically

<Setup Wizard>

When you turn on the power of the recorder for the first time, the Setup Wizard screen is displayed for making the minimum required settings.

Tips

- The Setup Wizard screen is automatically displayed only when you first turn on the power. It is not displayed from the next turn-on.


Turn on the power for the first time. Step 1
Select whether or not to use the Setup Wizard. Step 2
Language selection Step 3
Time/date adjust Step 4
HDD configuration Step 5
Recording setup Step 6
Step 1 Camera check Step 7
Step 2 Define the normal recording cycle Step 8
Step 3 Confirm the recording settings Step 9
Finish Step 10

**Step 1 After connecting cameras and monitors, turn on the MAIN switch on the rear of the recorder. Check that the ACCESS indicator goes out and then press the POWER button on the front panel of the recorder.**

- The <Setup Wizard> screen is displayed.

Notice

- While the ACCESS indicator is blinking, the POWER button does not work. Before pressing the POWER button, wait until the indicator goes out and "POWER OFF" is displayed on the LCD.

**Step 2 Select whether or not to use the Setup Wizard.**

- Select [Next] when using the Setup Wizard and [Quit] when not. When you select [Quit], the clock starts from the initial setting.

Tips

- When you want to cancel the Setup Wizard in midstream, cancel it according to the instructions displayed on the screen. You can cancel the Setup Wizard in step 6. In this case, the settings you made in steps 1 to 5 remain effective.

**Step 3 (When you select [Next])**
**Select a language.**

- The <Language selection> screen is displayed. Select a language used for the menus.
- Select a language and then [Next].

**Step 4-1 Set the current time and select [Set].**

**Step 4-2 Select [Setting] and set the time zone depending on the location of the recorder, and then select [Set].**

- After finishing the setting, select [Return] to return to the screen of step 4-1 and then [Next].

Tips

- When you select [Set], the clock starts.

**Step 5 Set the HDD configuration.**

- When you select [Register], all the connected HDDs are automatically registered as Main device.

  When the registration finishes, a confirmation screen is displayed. Check the settings and select [Next].
- For setting Copy device and Archive device, see ☞ pages 36 to 39.
- For mirroring setting, see ☞ page 37.
- For partition setting, see ☞ page 41.

**Step 6 Select whether or not to make recording settings.**

- Select [Next] when you make recording settings and [Quit] when not.

**Step 7 (When you select [Next])**
**When you select [Execute], the recorder automatically detects the active cameras and displays their numbers.**

- When the recorder finishes detecting the cameras, select [Next].
- The detection results are applied to Recording A-D, emergency recording, and single sequential display.

**Step 8 Set the recording cycle and recording hours per day.**

- After finishing the setting, select [Next].

**Step 9 Picture quality and FPS are automatically set for the cameras detected in step 7 and a confirmation screen is displayed.**

- The picture quality and FPS are same among all the cameras detected in step 7. The settings made in this step are applied to normal recording of Recording A.
- Picture size is set to 4CIF (frame mode). (☞ Page 55)
- For how to make recording settings manually, see ☞ pages 54 to 58.
- Check the confirmation screen and select [Next].

Tips

- Audio is not recorded by default. For how to record audio, see ☞ page 64.

  When you enable audio recording, the recording cycle becomes shorter than that when not recording audio. Check the estimated recording time in the Recording setting menu. (☞ Page 57)
- The estimated recording time is based on 24-hour recording per day.

**Step 10 Select [Finish] to exit the Setup Wizard.**

- The recorder becomes ready for operation.

## Setting Main, Copy, and Archive devices

**<HDD registration>**

You can assign the HDDs to Main, Copy, and Archive devices.

| Device | Application | Usable device | Device name |
|---|---|---|---|
| Main device | Used as the recording destination of normal recording, alarm recording, and emergency recording. | Internal HDD | [A], [B] |
| | | External HDD | [SBM01] - [SBM16] |
| Copy device | Used as the copy destination. | External HDD | [SBC01] |
| | | DVD/CD | [SBC17] |
| | | USB memory | [SBC18] |
| Archive device | Used as the archive destination. | External HDD | [SBB01] - [SBB16] |
| Not assigned | Not used for recording. | | |

**Notice**

- You cannot register devices during access to the HDD such as recording and playback. In addition, you cannot start recording or playback during registration.
- Devices that can be set as Copy device are serial bus HDD, DVD/CD drive, and USB memory.

  With this recorder, up to 4 GB USB memory devices are usable. USB memory devices with 128 MB or less capacity are not supported.

  Device that can be set as Archive device is serial bus HDD.
- Up to 18 devices including DVD/CD drive and USB memory can be connected to the serial bus. This is the total number of Main, Copy, and Archive devices.
- Up to 18 HDDs including internal HDDs can be used as Main device. (This is the total number of internal HDDs and serial bus HDDs.)
- Space totaling 22 GB of the internal HDDs is assigned to the preliminary recording area. (11 GB each from Internal A and B) This space is so assigned even when the preliminary recording is disabled.

### Cautions for using external devices

By connecting external HDDs to this recorder, you can expand the memory or use them as a copy device. However, when you perform recording, playback, or copy at a high rate using this unit, recording or playback data dropout or other failure may occur depending on the connected device because of slow data transfer or slow response. Be sure to check for such failure before starting the practical operation of the recorder.

Don't use the function to control the powers of external devices using the bus power of this recorder.

### Hookup and operation setting of HDDs

When you connect an HDD to the SERIAL BUS port of the recorder, use a USB 2.0 cable.

Turn off the MAIN switch before connecting the HDD. After the completion of connection, turn on the powers of the external devices first and then turn on the MAIN switch of the recorder.

The connected HDD is recognized at the time of startup.

### Order of recording and playback of the internal and external HDDs registered as Main device

Recording and playback are carried out on the internal HDDs in the following order:

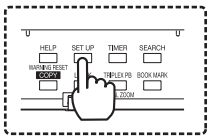
Internal A → Internal B

When recording or playback on the internal HDDs is completed, it is carried on to the HDDs connected to the SERIAL BUS port. Recording is carried out in the order of number contained in the device name "SBM□□," 01 to 16.

When recording or playback on the serial bus HDDs is completed, it is carried on to the internal HDDs.

## ♦ Registering the internal HDDs

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [HDD registration].**

- <HDD registration> screen is displayed.

**Step 3 Select [Setting] next to [HDD registration].**

- <HDD registration> screen is displayed.

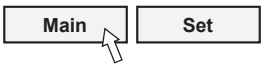
**Step 4 Select [Setting] next to [Register internal HDD].**

- <HDD registration Internal HDD> screen is displayed.

**Step 5 Check that the internal HDDs are listed on the <HDD registration Internal HDD> screen.**

- A and B represent the internal HDD numbers.

**Step 6 Select whether or not to register the internal HDDs as Main device.**




**[Main]:** HDD is registered as Main device.

**[Not assigned]:** HDD is not registered as Main device.

- Every time you press the button, the button's function changes between [Main] and [Not assigned].

**Step 7 Select [Set] to determine your settings.**

**Notice**

- When no HDD is registered as Main device, you cannot use a USB memory.

### Mirroring

By recording the same data on 2 HDDs that have the same capacity, you can reduce the risk of losing recorded data in the event of sudden crash of Main device. As the same data are recorded on 2 HDDs, the recordable time is halved.

**Notice**

- Before changing the HDD operation settings (such as turning the mirroring ON from OFF or OFF from ON and changing the partition settings), set the pre-alarm time of the alarm and emergency recording settings to 0 second. After setting the pre-alarm time to 0 second, check that the PRE ALARM and ACCESS indicators go out and then change the HDD operation settings.

**Step 1 Put a checkmark in the box of [Activate the mirroring mode].**

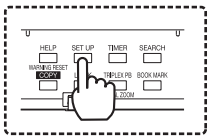
**Notice**

- When you enable the mirroring function with the recorded data stored in the HDD, the recorded data are deleted.
- You can enable the mirroring function of this recorder only when both of the internal HDDs A and B are set as [Main].
- The mirroring function of this recorder can be used with the internal HDDs only. To mirror data on external HDDs, use a device having the mirroring function and refer to the operation manual of the device to be used.
- In case of a failure in either HDD during mirroring, the recorder continues recording on the normal HDD only.

  When you replace the failed HDD, the data are automatically copied to the newly mounted HDD and they recover to the status before the failure. (Data synchronization) When the synchronization is interrupted by power-off, it resumes when the power is turned back on.
- Preliminary recording is not performed while the operation settings of normal, mirroring, or partition are being changed.

## ♦ Registering external HDDs

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [HDD registration].**

- <HDD registration> screen is displayed.

**Step 3 Select [Setting] next to [HDD registration].**

- <HDD registration> screen is displayed.

**Step 4 Select [Setting] next to [Register external HDD].**

- <HDD registration External HDD> screen is displayed.

**Step 5 Check that the HDDs connected to the SERIAL BUS port of the recorder are listed on the <HDD registration External HDD> screen.**

- When you select [Check], the ACCESS indicator of the selected HDD illuminates and you can check the selected HDD.

**Step 6 Select whether or not to register the HDDs connected to the SERIAL BUS port as Main, Copy, or Archive device.**

**[Main]:** HDD is registered as Main device.

**[Copy]:** HDD is registered as Copy device.

**[Archive]:** HDD is registered as Archive device.

**[Not assigned]:** HDD is not registered as Main, Copy or Archive device.

- Every time you press the button, the button's function changes among [Main], [Copy], [Archive], and [Not assigned] in order.

**Step 7 Set the order of recording on the registered HDDs connected to the SERIAL BUS port.**

- **[SBM□□]** ..... Represents Main device.

  **[SBC01]** ..... Represents Copy device.

  **[SBB□□]** ..... Represents Archive device.

  Set the number shown in □□ from 01 to 16. Data are saved in HDDs in the order of numbers you set.

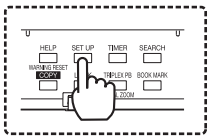
**Step 8 Select [Set] to determine your settings.**

**Notice**

- Data to be archived are transferred in 2 MB units. At the end of archive, the data of the latest recording point may not be completely transferred yet. Pay attention to this matter when you change the archive source device.
- The registered information may not be displayed correctly during recording or playback.

## ♦ Checking the registered devices

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [HDD registration].**

- <HDD registration> screen is displayed.

**Step 3 Select [Setting] next to [HDD registration].**

- <HDD registration> screen is displayed.

**Step 4 Select [Confirm] of the device you want to check under [Check the registered HDDs].**

- The HDDs registered as the selected device are listed. Regardless of the order of registration, devices are displayed in the order of recording.
- When you press the button of the device name, the ACCESS indicator of the selected HDD illuminates and you can check the selected HDD.

## Setting the repeat recording and partition of Main device

**<Main HDD setting>**

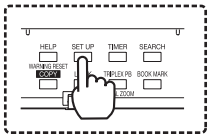
**Notice**

- You cannot make settings during access to the HDD such as recording and playback. In addition, you cannot start recording or playback during setting.

### ♦ Setting the repeat recording

You can set the recorder's operation performed when the available space in Main device runs out during recording.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




**or**

- <Main menu> is displayed.

**Step 2 Select [HDD registration].**

- <HDD registration> screen is displayed.

**Step 3 Select [Setting] next to [Main HDD setting].**

- <Main device setting> screen is displayed.

**Step 4 Select whether to enable or not the repeat recording in each area.**

- To enable the repeat recording, put a checkmark in the box.

  **[Enable]:** Automatically returns to the start of the HDD and resumes recording (overwriting).

  **[Disable]:** Stops recording at the end of the HDD. When [Warning] of [Remain] on the <Warning display • Buzzer • Call-out 1> screen (☞ page 105) is selected, recording resumes as the warning is cleared.

  When [Warning] of [Remain] on the <Warning display • Buzzer • Call-out 1> screen (☞ page 105) is unselected, recording resumes as the recorded data are deleted or the repeat recording is enabled.

**Notice**

- The repeat recording in the partitioned areas can be enabled only when the corresponding areas are set in the <Partition setting>.
- When a warning is issued, "Please push the [HELP] button" is displayed on the screen. The recorder keeps the latest 16 warnings. The warnings issued before them are reset and not displayed.
- When the repeat recording is disabled in the alarm recording area or emergency recording area and their available space runs out, the alarm recording or emergency recording stops. When an alarm or emergency signal is input after that, the indicator illuminates for a moment but recording is not performed. (You may not notice that the indicator illuminates.) In this case, enable the repeat recording or delete the recorded data to resume recording.

## ♦ Setting the partition

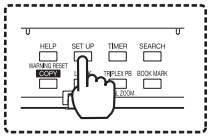
You can partition the Main device.

| Partition setting | Data to be recorded |
|---|---|
| **No partition** | Normal recording area: Normal recording, Alarm recording, Emergency recording |
| **Allocate alarm recording area** | Normal recording area: Normal recording; Alarm recording area: Alarm recording, Emergency recording |
| **Allocate emergency recording area** | Normal recording area: Normal recording, Alarm recording; Emergency recording area: Emergency recording |
| **Allocate alarm recording area and emergency recording area** | Normal recording area: Normal recording; Alarm recording area: Alarm recording; Emergency recording area: Emergency recording |

**Notice**

- Before changing the HDD operation settings (such as turning the mirroring ON from OFF or OFF from ON and changing the partition settings), set the pre-alarm time of the alarm and emergency recording settings to 0 second. After setting the pre-alarm time to 0 second, check that the PRE ALARM and ACCESS indicators go out and then change the HDD operation settings.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [HDD registration].**

- <HDD registration> screen is displayed.

**Step 3 Select [Setting] next to [Main HDD setting].**

- <Main device setting> screen is displayed.

**Step 4 Select [Setting] next to [Change partition setting].**

- <Partition setting> screen is displayed.

**Step 5 Create partitions in the Main device.**

- Set the capacities of the normal recording area, alarm recording, area and emergency recording area.
- When you allocate the alarm recording area and emergency recording area, the specified space in the HDDs set as Main device is divided to be used for alarm recording and emergency recording independently.

**Notice**

- When you create partitions, mirroring cannot be used.
- Functions such as playback, search, information display, remaining capacity setting (mode-out/call-out) and deletion of recorded data can be individually set in each of the normal recording area, alarm recording area, and emergency recording area.
- When you copy or archive recorded data, you can select any of the normal recording area, alarm recording area, and emergency recording area as copy source.
- Preliminary recording is not performed while the operation settings of normal, mirroring, or partition are being changed.

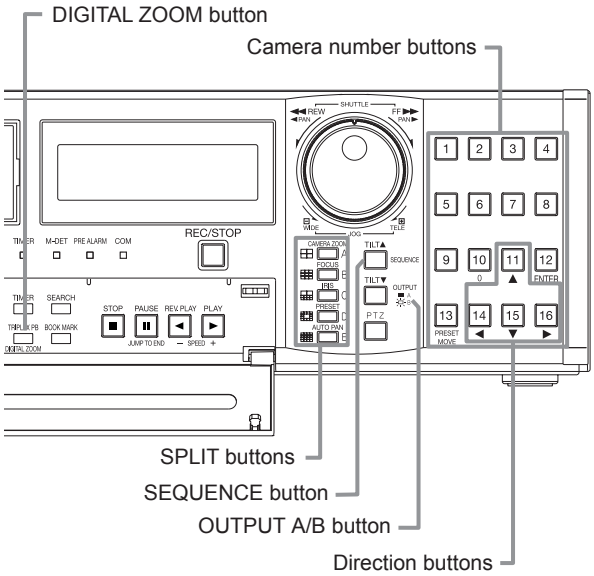
**Tips**

- When the sum of capacities of the normal recording area, alarm recording area, and emergency recording area is 100%, you cannot increase the capacity any more.
- You cannot set the normal recording area to 0%.
- The recording area for preliminary recording is assigned in addition to the partitions you can set. This space is assigned even when the preliminary recording is disabled.

# Viewing images captured by the cameras

## Multiplexer function

You can display images captured by the connected cameras on 4-split, 9-split, 10-split, 13-split or 16-split screen. In addition, you can arrange the positions of the displayed images on the screen.




**Notice**

- You cannot switch the screen mode to the other single screen modes or split screen mode while the menu screen is displayed. To switch the screen mode, close the menu screen first and then press a camera number button (1 to 16) or SPLIT button.

### ♦ Single screen display

A live image captured by one camera is displayed on the screen.

**Step 1 Press a camera number button (1 to 16).**

- The image from the camera corresponding to the button you pressed is displayed on the entire screen.

### ♦ Split screen display

Images captured by multiple cameras are displayed on the split screen.

**Step 1 Press the SPLIT button.**

Every time you press the button, the screen mode changes in the order shown below.

4-split button (⊞): 4-split a → 4-split b → 4-split c → 4-split d → 4-split a → ...

9-split button (▦): 9-split a → 9-split b → 9-split a → ...

10-split button (▦): 10-split a → 10-split b → 10-split a → ...

13-split button (▦): 13-split a → 13-split b → 13-split a → ...

16-split button (▦): 16-split screen

**Notice**

- When the camera images are displayed in the split screen mode, thin black bars may appear at the top and bottom or right and left of respective images depending on the types of the cameras you use. This symptom tends to occur when the size of the camera image is smaller than that defined by the display specifications of this recorder.

**Tips**

- To set the camera numbers to be displayed in each screen mode, use <Multiplexer setting> in the <Setup> menu. You can set the camera numbers to be displayed differently for Output A and Output B. (☞ Page 110)

### ♦ Sequential display

Images captured by cameras are displayed and switched at constant intervals.

**Step 1 Press the SEQUENCE button.**

- The sequential display starts in the currently selected mode, split or single screen display mode.
- Sequential display mode has the following types:

  Single screen sequential display

  4-split sequential display

  9-split sequential display

  10-split sequential display

  13-split sequential display

**Step 2 To cancel the sequential display, press the SEQUENCE button again.**

- You can also cancel the sequential display by displaying other type of split screen or by pressing a camera number button (1 to 16) for single screen display.

**Notice**

- Sequential display cannot be used during playback.

**Tips**

- To set the order of images to be displayed and the switching interval, use <Multiplexer setting> in the <Setup> menu. (☞ Page 110)

## ♦ Switching Output A and B

You can display images captured by different cameras on two monitors separately.

**Step 1 Press the OUTPUT A/B button.**

- When Output A is selected, the button goes out. When Output B is selected, the button illuminates.
- When Output A is selected, the buttons for controlling the multiplexer function serve as those for controlling the monitor for Output A. When Output B is selected, they serve as buttons for controlling the monitor for Output B.

## ♦ Operating the DIGITAL ZOOM button

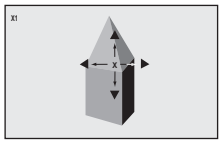
By pressing the DIGITAL ZOOM button during the single screen display mode, you can magnify the displayed image 1 time, 2 times, or 4 times.

**Notice**

- The zoom function can be used during the single screen display mode only. You can move the magnified area up, down, right, or left by pressing the direction buttons.

**Step 1 Press the DIGITAL ZOOM button during the single screen display mode.**

- "X1" appears on the top left of the screen and the magnification center point (X) appears.




**Step 2 To move the magnified area vertically or horizontally, press the directions buttons (▲, ▼, ◀, and ▶ buttons).**

**Notice**

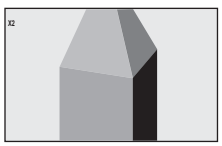
- When magnifying a CIF-size image by two times, you cannot move the magnification center point.

**Tips**

- The position of the magnification center point is retained even when the display screen is switched or the power is turned off by pressing the POWER button on the front panel of the recorder. This is useful when the point to magnify is determined in advance.
- Digital zoom is cancelled when the MAIN switch on the rear panel of the recorder is turned off or when a power failure occurs.

**Step 3 Press the DIGITAL ZOOM button.**

- Every time you press the button, the magnification rate changes in the order of X2 (2 times), X4 (4 times), normal display, and X1 (1 time).



**Tips**

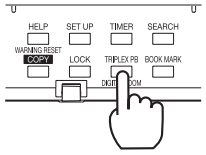
- The magnification function can be used even during playback.
- When you pause playback of images recorded by multiple cameras in the single screen display mode and then magnify the displayed image, the screen may turn to black. In this case, you can display the magnified image by turning the JOG dial to advance the displayed image frame by frame.
- The zoom function of this recorder uses digital magnification system, and therefore, the details of the image may appears like tiny blocks when magnified.

**When you press the DIGITAL ZOOM button, the camera number buttons 11, 14, 15, and 16 serve as the direction buttons.**

## ♦ Triplex playback

While displaying images captured by cameras, you can view playback image of the desired camera.

**Step 1 Press the TRIPLEX PB button during the split screen display mode.**

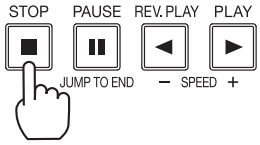



- The triplex playback mode starts.

**Step 2 Within 3 seconds after step 1, press the camera number button corresponding to the camera of which playback image you want to view.**

- The image and audio of the selected camera are played back. The image being played back is marked by a green frame.
- With the playback images, you can perform shuttle viewing and frame-by-frame playback. (☞ page 77)
- To change the camera for triplex playback, stop playback and then follow steps 1 and 2 above.

**Step 3 Press the STOP button to stop playback.**




**Notice**

- Triplex playback can be used with Output A only.
- When no camera number button is pressed for 3 seconds or longer after the TRIPLEX PB button is pressed, the triplex playback mode is canceled.
- You cannot display the playback image of the camera of which image is not displayed on the split screen. In this case, follow the above procedures again as the triplex playback mode is canceled.
- When you press any button other than the camera number buttons after the triplex playback mode starts, follow the above procedures again as the triplex playback mode is canceled.
- When you display a different type of split screen during the triplex playback, the triplex playback mode is canceled. (When the image captured by the camera being selected for triplex playback is displayed on a newly displayed split screen, the triplex playback continues even when you change the split screen.)
- When the alarm display function is active, you cannot use the triplex playback mode. When the alarm display function becomes active during triplex playback, the triplex playback is canceled and the normal camera images are displayed after the completion of the alarm display.
- When the data being played don't contain images captured by the selected camera, the screen turns to black. In this case, the green frame does not appear.
- During triplex playback, the clock displayed on the screen shows the date and time when the data being played were recorded.

# Controlling the cameras

You can control the connected cameras using the PTZ function.

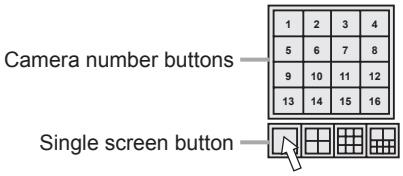
## Controlling the cameras using the menus

**Step 1 Right-click the mouse.**

- The mouse operation screen is displayed.

**Step 2 Display the image from the camera to be controlled in the single screen display mode.**

- When you press the Single screen button, the Camera number buttons are displayed. Click the desired camera number.

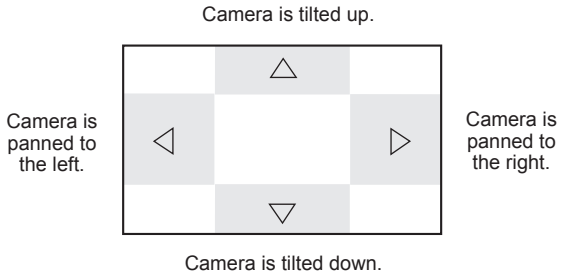



**Step 3 Click the PTZ button.**

- The PTZ mode starts.

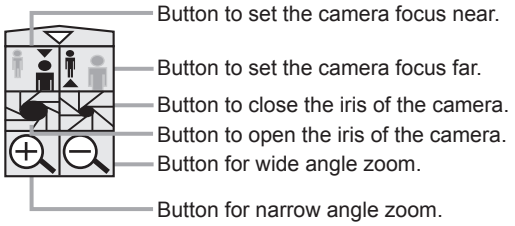
**Step 4-1 Pan or tilt the PTZ camera.**

- Click the shaded areas on the screen shown below to adjust the camera angle.




**Step 4-2 Adjust the zoom, iris, and focus of the camera.**

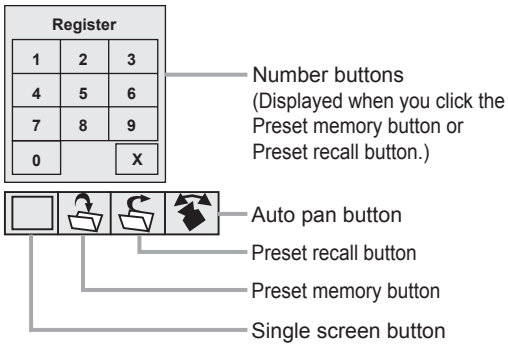
- Click the following buttons for adjustment. When you click the ⧋ button, the hidden buttons are displayed.


Button to set the camera focus near.
Button to set the camera focus far.
Button to close the iris of the camera.
Button to open the iris of the camera.
Button for wide angle zoom.
Button for narrow angle zoom.

**Step 4-3 Register the preset positions of the camera.**

- To register viewing points, click the Preset memory button and then click the Number buttons within 5 seconds. Up to 48 points can be registered.

  For example, to register the current camera position to preset number 2, click the Preset memory button and then Number buttons 0 and 2 in order.




**Notice**

- The recorder may not be able to register 48 points depending on the system configured.

**Step 4-4 Move the camera to the registered preset position.**

- When you click the Preset recall button and then press the number buttons within 5 seconds, the camera is moved to the registered preset position.

  For example, to move the camera to the registered preset position 2, click the Preset recall button and then the Number buttons 0 and 2 in order.

**Step 4-5 Activate the auto pan function.**

- When you click the Auto pan button, the auto pan function of the camera is activated.

**Step 5 To change the controlled camera, display the image from the camera you want to control in the single screen display mode.**

- When you press the Single screen button, the Camera number buttons are displayed. Click the desired camera number.

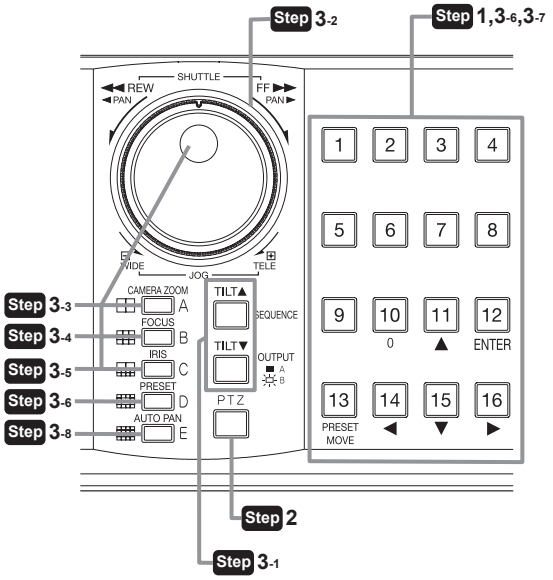
**Notice**

- Operation of the camera may become impossible for some reason such as a specification change of the camera. In addition, some functions may become invalid.

**Tips**

- To go back to the mouse operation screen, click [X] in the upper right corner of the screen.
- Operations or functions performed with this recorder are simplified ones. They are not equivalent to those of special control devices.

## Controlling the cameras using the buttons on the recorder




**Step 1 Press the number button corresponding to the controlled camera to display its image in the single screen display mode.**

**Step 2 Press the PTZ button.**

- The PTZ mode starts and the button illuminates.
- While the recorder is in the PTZ mode, "PTZ" is displayed on the screen.

**Step 3-1 Adjust the camera angle. (Tilt)**

- When you press the TILT ▲ button, the camera is tilted up. When you press the TILT ▼ button, the camera is tilted down.

**Step 3-2 Adjust the camera angle. (Pan)**

- When you turn the SHUTTLE ring to the right, the camera is panned to the right. When you turn the SHUTTLE ring to the left, the camera is panned to the left.

**Step 3-3 Adjust the camera zoom.**

- You can adjust the camera zoom by pressing the CAMERA ZOOM button and then turning the JOG dial to the left (wide) or right (tele).

**Step 3-4 Adjust the camera focus.**

- You can adjust the camera focus by pressing the FOCUS button and then turning the JOG dial to the left (far) or right (near).

**Step 3-5 Adjust the camera iris.**

- You can adjust the iris by pressing the IRIS button and then turning the JOG dial to the left (close) or right (open).

**Step 3-6 Register the preset positions of the camera.**

- To register viewing points, press the PRESET button and then press the camera number buttons within 10 seconds. Up to 48 points can be registered.

  For example, to register the current camera position to preset number 2, press the PRESET button and then camera number buttons 0 (10) and 2 in order.

**Notice**

- The recorder may not be able to register 48 points depending on the system configured.

**Step 3-7 Move the camera to the registered preset position.**

- When you press the PRESET MOVE button (camera number 13) and then press the camera number buttons within 10 seconds, the camera is moved to the registered preset position.

  For example, to move the camera to the registered position 2, press the PRESET MOVE button and then the number buttons 0 (10) and 2 in order.

**Step 3-8 Activate the auto pan function.**

- When you press the AUTO PAN button, the auto pan function of the camera is activated.
- When you press the PTZ button, the PTZ mode exits.

**Notice**

- During PTZ operation by the buttons on the recorder, the POWER button and the functions related to playback do not work. Furthermore, menus cannot be displayed.
- Operation of the camera may become impossible for some reason such as a specification change of the camera. In addition, some functions may become invalid.

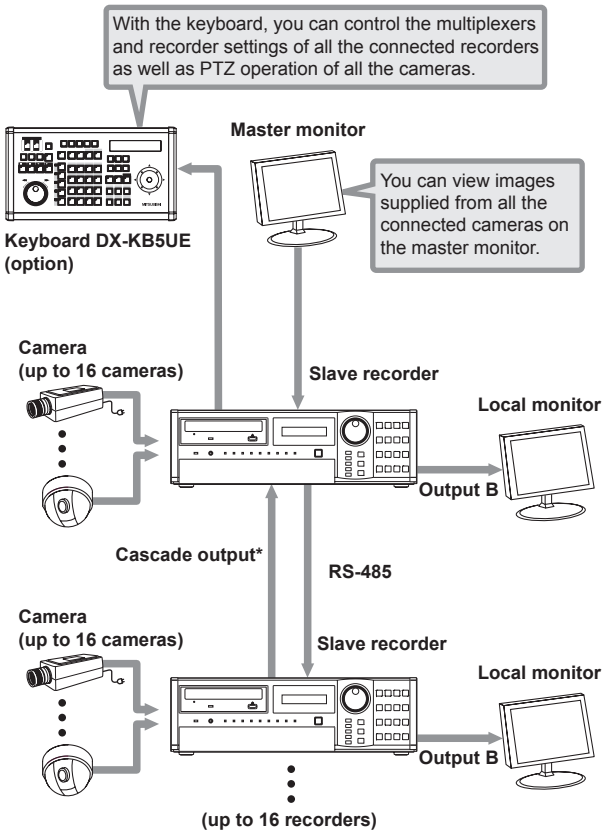
**Tips**

- For the camera settings and other detailed settings for PTZ function, see "PTZ camera setting" on ☞ page 116.
- Operations or functions performed with this recorder are simplified ones. They are not equivalent to those of special control devices.

# Using cascade function

You can connect up to 16 DX-TL5716U, and using the optional keyboard, you can view images supplied from all the connected cameras on the master monitor that is connected to the first recorder.

**Configuration example**


With the keyboard, you can control the multiplexers and recorder settings of all the connected recorders as well as PTZ operation of all the cameras.
Master monitor
You can view images supplied from all the connected cameras on the master monitor.
Keyboard DX-KB5UE (option)
Camera (up to 16 cameras)
Slave recorder
Local monitor
Output B
Cascade output*
RS-485
Camera (up to 16 cameras)
Slave recorder
Local monitor
Output B
(up to 16 recorders)

* : The Cascade output terminal outputs the same image as that from the OUTPUT A terminal.

## Before using cascade function

**Notice**

- Check the following.
  - Recorders are connected via RS-485 terminal. Video terminals are cascaded. (☞ Page 26 “Cascade connection”)
  - Each recorder has its own unique ID number from 01 to 16. (☞ Page 114 “RS-485 cascade setting”)

## Cautions about the cascade function

- See ☞ page 26 and the keyboard’s instruction manual for cascade connection and operational procedures.
- The status of the cascade mode is displayed on the LCD of the slave recorder.

<Cascade mode (connecting)>

```
01-01-2009 00:00:00
SLAVE ON       ID01
```

<Cascade mode (standby)>

```
01-01-2009 00:00:00
SLAVE MODE     ID01
```

- Even during cascade connection, you can operate all the connected recorders using the buttons on the front panel or via communication, however, when such operation is instructed at the same time as the operation via the keyboard, the operation instructed later precedes.
- Images from the cascade output are not output from the XGA port.
- When you switch the recorder to be operated, the displayed images may be disturbed.

## Recording methods

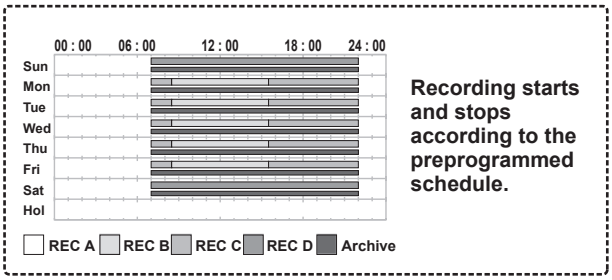
To record images, you can use any of three methods as follows.

### Manual recording (☞ page 65)

When you press the REC/STOP button on the front panel of the recorder, recording starts. The recording picture quality and FPS of Recording A are applied.

### Timer recording (☞ pages 66 to 69)

Recording starts or stops automatically according to the preprogrammed schedule at the recording picture quality and FPS that are preset to Recording A to Recording D.




### Recording start/stop triggered by external contact signal

You can start or stop recording using the EVENT terminals of the I/O terminals on the rear panel of the recorder. (☞ page 108)

The settings of Recording A are used in this recording method.

This function doesn't work during timer recording.

## Recording types

### Normal recording

Recording is performed at the recording picture quality and FPS you preset for normal recording.

### Alarm recording

Upon receipt of a trigger for starting alarm recording, the recorder starts recording at the recording picture quality and FPS you preset for alarm recording.

You can configure advanced recording settings by making settings for normal recording and alarm recording separately. For example, you can change the FPS rate of the camera used for alarm recording while keeping the normal recording settings.

### Pre-alarm recording

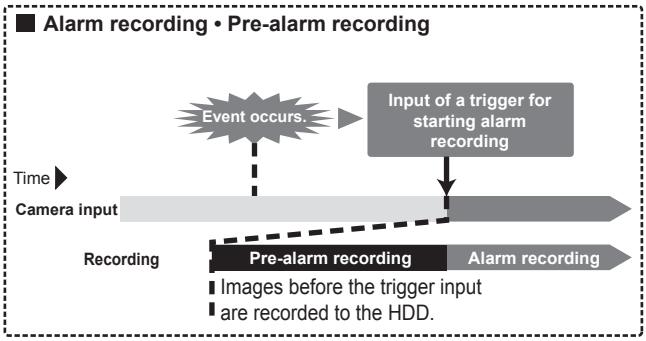
Pre-alarm recording is a function to start recording maximum 30 minutes before the start of alarm recording.

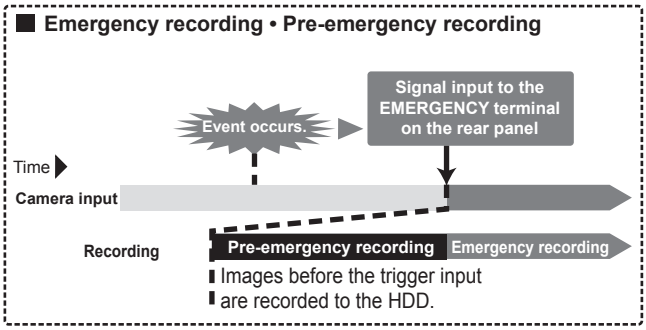
### Emergency recording

When the EMERGENCY terminal receives a signal, the recorder starts recording images from all the selected cameras with the highest picture quality based on the FPS rate you preset for emergency recording.

### Pre-emergency recording

Pre-emergency recording is a function to start recording maximum 30 minutes before the start of emergency recording.



## Before making recording settings

Notice

- Because the recorder copies or searches recorded data based on the date and time of recording, check that the recorder's clock is correct before you start recording.
- You cannot change the recording settings during normal recording and alarm recording. To change the settings, stop recording. When alarm recording by motion detection is enabled, recording may not be stopped because of frequent alarm inputs. In this case, set [Alarm input] to [Off] on the <Recording settings> screen to temporarily prohibit alarm input (for max. 5 minutes). (☞ Page 65)
- It is necessary to check the repeat recording settings before you start recording. Check the repeat recording settings and then make the recording settings. (☞ Page 40)
- The warning display saying “Camera image is lost or distorted” appears when the video signal is lost or an error is detected even while the recorder is not in recording. This warning is issued for the cameras set for normal, alarm, and emergency recordings. Exclude unused cameras from the recording setting.

### ♦ Playback during recording

You can play back already recorded data while continuing recording.

Notice

- Images being played back may be stopped temporarily or the audio may be interrupted.
- Noise may appear in the images during playback using the jog/shuttle.

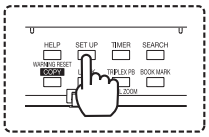
Tips

- The layout on the split screen is saved individually for live and playback.

## Procedure of configuration of recording settings

**Display the Main menu.** ☞ Page 54 Step 1

Left-click the mouse or press the SET UP button on the front panel of the recorder to display the <Main menu>.




or

**Display the Recording setting screen.** ☞ Page 54 Step 2

Select [Recording setting] to display the <Recording setting> screen.

**Select [Auto setting] or [Manual setting] for the recording setting method.** ☞ Page 54 Step 3

**[Auto setting]:** The recorder automatically detects the cameras from which the recorder is receiving video signals. When you designate the recording duration, recording time per day, and picture size, the recorder automatically allocates to the detected cameras the recording picture quality and FPS for normal recording.

**[Manual setting]:** You can configure the settings shown on the right page manually.

**Manual setting**

**Auto setting**

**Camera check** ☞ Page 54 <Auto setting> Step 4

The recorder automatically detects the cameras from which it is receiving video signals.

**Define the normal recording cycle** ☞ Page 54 <Auto setting> Step 5

When you designate the recording duration, recording time per day, and picture size, the recorder automatically allocates to the detected cameras the recording picture quality and FPS for normal recording.

**Confirm the recording settings** ☞ Page 54 <Auto setting> Step 6

Check the items automatically set.

**Apply new settings** ☞ Page 54 <Auto setting> Step 7

Select the recording pattern (A to D) to which you want to apply the automatically set items.
[Recording A]: Used for manual recording and timer recording.
[Recording B] to [Recording D]: Used for timer recording.

The tables on ☞ pages 51 to 53 are the lists of setting items shown on the <Recording settings> screen. You can use these lists to check the parameters and record the menu items you set. Items in boldface type are parameters you can actually set.
For later review, you are recommended to mark on the items you set.
The colored values or settings are factory defaults.

**Select the recording pattern** ☞ Page 55 <Manual setting> Step 4

Select the recording pattern from [Recording A] to [Recording D] that you want to set on the <Recording settings> screen.
[Recording A]: Used for manual recording and timer recording.
[Recording B] to [Recording D]: Used for timer recording.

**Recording A to D - Picture size** ☞ Pages 55 and 56 <Manual setting> Step 5 to 8

Set the following items.
• Picture size
• Recording when motion is detected
• Pre-alarm recording time ( [Pre-alarm time] )
• Alarm recording time ( [Post-alarm time] )

| Picture size | | | Long recording mode | | REC in alarm recording mode by MD | REC in normal recording mode by MD | Alarm recording | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Pre-alarm time | Post-alarm time | |
| 4CIF | 2CIF | CIF | On | Off | | | **0 sec to 59 sec**<br>**1 min to 30 min**<br>(The factory-default setting is 0 sec.) | **2 sec to 59 sec**<br>**1 min to 60 min**<br>(The factory-default setting is 5 sec.) | Manual |
| | | | | | | | [ ] min/sec | [ ] min/sec | |

**Recording A to D - Picture quality and FPS** ☞ Page 56 <Manual setting> Step 9

Set the following items for each camera.
• Operation on/off
• Picture quality and FPS for normal recording
• Picture quality and FPS for alarm recording

| | Active | | Normal recording | | | | | | | | | | | | | | | | Alarm recording | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Quality | | | | | | | | | FPS | | | | | | | | Quality | | | | | | | | | FPS | | | | | | | |
| | On | Off | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | 30 | 15 | 7.5 | 3.8 | 2 | 1 | 0.5 | 0.2 | --- | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | 30 | 15 | 7.5 | 3.8 | 2 | 1 | 0.5 | 0.2 | --- |
| CAM 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CAM 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**Continued to the next page.**

**Continued from the previous page.**

## Recording A to D - Alarm camera setting/Alarm input/output

☞ Pages 57 and 58 <Manual setting> Step **10 to 12**

Set the following items for each sensor.
- Cameras for alarm recording ([Recording camera])
- Trigger for starting alarm recording ([Input])
- Camera position when alarm signal is input ([CAM], [P.set])

| | Alarm camera setting: Recording camera | | | | | | | | | | | | | | | | Alarm input/output: Input | | | | | | | Output (PTZ preset position): CAM | | P.set | | CAM | | P.set | | CAM | | P.set | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | EXTorMD-A | EXTorMD-B | EXT&MD-A | EXT&MD-B | EXT | MD-A | MD-B | - | 1 to 16 | - | 01 to 48 | - | 1 to 16 | - | 01 to 48 | - | 1 to 16 | - | 01 to 48 |
| Sensor 1 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 2 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 3 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 4 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 5 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 6 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 7 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 8 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 9 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 10 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 11 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 12 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 13 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 14 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 15 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |
| Sensor 16 | | | | | | | | | | | | | | | | | | | | | | | | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] | | [ ] |

## EMR recording

☞ Pages 60 and 61

Set the items for emergency recording.

| Picture size | | | Recording cameras | | | | | | | | | | | | | | | | FPS | | | | | | | | | Pre-alarm time | Post-alarm time | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4CIF | 2CIF | CIF | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 30 | 15 | 7.5 | 3.8 | 2 | 1 | 0.5 | 0.2 | --- | **0 sec to 59 sec**<br>**1 min to 30 min**<br>(The factory-default setting is 0 sec.) | **2 sec to 59 sec**<br>**1 min to 60 min**<br>(The factory-default setting is 10 min.) | Manual |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | [ ] min/sec | [ ] min/sec | |

## Audio recording

☞ Page 64

Set the items for audio recording.

| Record audio in sync with Camera 1 | | Quality | | Recording mode | |
|---|---|---|---|---|---|
| On | Off | Normal | Economy | Constant | Alarm |
| | | | | | |

## Motion detection setting

☞ Pages 62 and 63

Set the items for motion detection.

| | A | | | | | | | | | | B | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sensitivity | | | | | MD threshold | Ref. time | | | | Sensitivity | | | | | MD threshold | Ref. time | | | |
| | Low | Mid-Low | Middle | Mid-High | High | (0 to 418) (The factory-default setting is 5.) | 0.25sec | 0.5sec | 1sec | 2sec | Low | Mid-Low | Middle | Mid-High | High | (0 to 418) (The factory-default setting is 5.) | 0.25sec | 0.5sec | 1sec | 2sec |
| CAM 1 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 2 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 3 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 4 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 5 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 6 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 7 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 8 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 9 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 10 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 11 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 12 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 13 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 14 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 15 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |
| CAM 16 | | | | | | [ ] | | | | | | | | | | [ ] | | | | |

## Timer program

☞ Pages 66 to 69

Set the items for timer recording.

| | Day | | | | | | | | | | | | | Start | End | Mode | | | | | | | MD | | SPL1 to 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | --- | Sun | Mon | Tue | Wed | Thu | Fri | Sat | Every | SPL1 | SPL2 | SPL3 | Holiday | | | --- | REC A | REC B | REC C | REC D | Archive | Skip | ON | OFF | |
| 1 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | SPL1 |
| 2 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | [ ] |
| 3 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | [ ] |
| 4 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | SPL2 |
| 5 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | [ ] |
| 6 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | [ ] |
| 7 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | SPL3 |
| 8 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | [ ] |
| 9 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | [ ] |
| 10 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | [ : ] | [ : ] | | | | | | | | | | |

Holiday setting

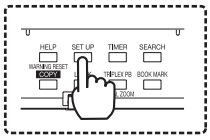
(Month / Day)

## Making recording settings automatically

**<Auto setting>**

When you define the normal recording cycle, the recorder automatically sets the picture quality and FPS for normal recording.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [Recording setting].**

- The <Recording setting> screen is displayed.

**Step 3 Select [Setting] next to [Auto setting].**

- Select [Next] on the <Recording setting Auto> screen.

### Camera check

**Step 4 Select [Execute].**

- When you select [Execute], the recorder automatically detects the cameras from which it is receiving video signals.
- When the transparent setting (☞ page 109) is disabled, you cannot view images. Change the setting, as needed.
- When the detection is completed, select [Next]. The <Define the normal recording cycle> screen is displayed.

### Define the normal recording cycle

**Step 5 Set [Recording duration], [Recording time per day], and [Picture size].**

- Picture quality and FPS are automatically set for the cameras detected in step 4 and a confirmation screen is displayed.
- When you set the recording duration to 2 years, images are recorded in the long recording mode, where FPS is set to 3.8 or less to prolong the recording duration. However, the recording and playback picture quality decreases. Images recorded in the long recording mode are delayed to be displayed during playback or they are degraded during variable-speed playback such as high-speed playback.
- When the setting is completed, select [Next]. The <Confirm the recording settings> screen is displayed.

**Notice**

- When you use the auto setting, <Audio recording> setting is not reflected. The setting values based on the designated condition are assigned to image recording only. When <Audio recording> is set to active, estimated time displayed on the screen becomes shorter.

### Confirm the recording settings

**Step 6 Check the recording settings and select [Next].**

- The settings you make in this procedure are applied to normal recording.
- The picture quality and FPS are same among all the cameras detected in step 4.
- To change the settings, select [Return] to go back to the screen in step 5.
- When the confirmation is completed, select [Next]. The <Apply settings> screen is displayed.

### Apply new settings

**Step 7 Select the recording pattern from [Recording A] to [Recording D] to which you want to apply the settings and then select [Execute].**

- The automatically configured settings are applied to the selected recording pattern.

  **[Recording A]:** Used for manual recording and timer recording.

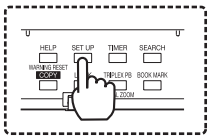
  **[Recording B] to [Recording D]:** Used for timer recording.

## Making recording settings manually

**<Manual setting>**

You can make recording settings manually.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [Recording setting].**

- The <Recording setting> screen is displayed.

**Step 3 Select [Setting] next to [Manual setting].**

- The <Recording settings> screen is displayed.

### ♦ Recording A to D

**Step 4 Select the recording pattern you want to set from among [Recording A] to [Recording D].**

**[Recording A]:** Used for manual recording and timer recording.

**[Recording B] to [Recording D]:** Used for timer recording.

- Select [Setting] of the recording pattern you want to set.

#### Picture size

**Step 5 Select the picture size and select [Execute].**

**[4CIF]:** 704x480. The maximum FPS rate is 120.

**[2CIF]:** 704x240. The maximum FPS rate is 240.

**[CIF]:** 352x240. The maximum FPS rate is 480.

- When you select [Long recording mode], the recording duration is prolonged with FPS set to 3.8 or less. However, the recording and playback picture quality decreases.

**Notice**

- When you change the picture size, the picture quality and FPS are initialized.

**Step 6 Select motion detection recording.**

**[REC in alarm recording mode by MD]:** Alarm recording starts when motion is detected.

**[REC in normal recording mode by MD]:** Normal recording starts when motion is detected. Images are recorded at the picture quality and FPS for normal recording. This recording is not registered to the alarm list.

When partition is set, images are recorded to the normal recording area.

Set the trigger for starting alarm recording to other than [EXT] in step 11 on ☞ page 58.

In the case of Recording A, when motion detection recording is not being performed, you can start normal recording by pressing the REC/STOP button.

In the timer operation mode, when [MD] on the Timer program screen is [ON], the recorder is in the motion detection stand-by mode and performs normal recording only with the cameras that detect motion. (See the tables on the next page.)

**Notice**

- In normal recording by motion detection, the settings made on the <Alarm camera setting> screen are ignored and only the cameras that detect motion are used. In alarm recording triggered by grounding of the rear terminals, the cameras selected on the <Alarm camera setting> screen are used.
- When the trigger for starting alarm recording is set to [EXT&MD], normal recording by motion detection is performed only while the rear terminals are being grounded.
- When motion detection recording is set to normal recording, set [MD] for timer recording to [ON] (☞ page 67).

**Step 7 Set the pre-alarm recording time in [Pre-alarm time] under [Alarm recording].**

**[0 Sec]:** Pre-alarm recording is not performed.

- Note that the actual pre-alarm recording time may become shorter than the specified time because of HDD malfunction or other failure.

**Notice**

- Due to the restrictions on data format, the pre-alarm recording time may vary from the specified time.
- When the alarm recording area is allocated by the partition setting, the alarm recording data and pre-alarm recording data are saved in the alarm recording area. To play back the already recorded data, set [Play device selection] (☞ page 70) to [HDD (Alarm)].
- The picture quality and FPS of the normal recording or alarm recording being executed are applied to the pre-alarm recording.
- Pre-alarm recording is performed only when the pre-alarm recording time is set to other than 0 second.

**Step 8 Set the alarm recording time in [Post-alarm time] under [Alarm recording].**

**[Manual]:** Alarm recording continues until the grounding of the ALARM IN terminal ceases.

- When the setting is completed, select [Next]. The <Picture quality and FPS> screen is displayed.

**Notice**

- Ensure that the Pre-alarm time is shorter than the Post-alarm time.

**Picture quality and FPS**

**Step 9 Set the picture quality and FPS for normal recording and alarm recording.**

- Recording is not performed when FPS is set to [---].
- The picture quality has 9 levels from L1 to L9, and L9 is the highest.
- Images from cameras of which [Active] box is selected are recorded. Images from cameras of which [Active] box is unselected are not recorded.
- By using [Ditto], you can copy the settings of the above row.
- When the setting is completed, select [Next]. The <Alarm camera setting> screen is displayed.

■ **When [REC in normal recording mode by MD] is selected**

| Input setting | During manual operation | | During timer operation When [MD] on the Timer program screen is set to [ON] | | During timer operation When [MD] on the Timer program screen is set to [OFF] | |
|---|---|---|---|---|---|---|
| | Normal recording | Alarm recording | Normal recording | Alarm recording | Normal recording | Alarm recording |
| EXT | ○ (button) | ○ (EXT) | × | ○ (EXT) | × | ○ (EXT) |
| MD-A | ○ (button or MD-A) | × | ○ (MD-A) | × | × | × |
| MD-B | ○ (button or MD-B) | × | ○ (MD-B) | × | × | × |
| EXT & MD-A | ○ (button or MD-A during the terminal is grounding) | × | ○ (MD-A during the terminal is grounding) | × | × | × |
| EXT & MD-B | ○ (button or MD-B during the terminal is grounding) | × | ○ (MD-B during the terminal is grounding) | × | × | × |
| EXT or MD-A | ○ (button or MD-A) | ○ (EXT) | ○ (MD-A) | ○ (EXT) | × | ○ (EXT) |
| EXT or MD-B | ○ (button or MD-B) | ○ (EXT) | ○ (MD-B) | ○ (EXT) | × | ○ (EXT) |

■ **When [REC in alarm recording mode by MD] is selected**

| Input setting | During manual operation | | During timer operation When [MD] on the Timer program screen is set to [ON] | | During timer operation When [MD] on the Timer program screen is set to [OFF] | |
|---|---|---|---|---|---|---|
| | Normal recording | Alarm recording | Normal recording | Alarm recording | Normal recording | Alarm recording |
| EXT | ○ (button) | ○ (EXT) | ○ (timer) | ○ (EXT) | ○ (timer) | ○ (EXT) |
| MD-A | ○ (button) | ○ (MD-A) | ○ (timer) | ○ (MD-A) | ○ (timer) | × |
| MD-B | ○ (button) | ○ (MD-B) | ○ (timer) | ○ (MD-B) | ○ (timer) | × |
| EXT & MD-A | ○ (button) | ○ (MD-A during the terminal is grounding) | ○ (timer) | ○ (MD-A during the terminal is grounding) | ○ (timer) | × |
| EXT & MD-B | ○ (button) | ○ (MD-B during the terminal is grounding) | ○ (timer) | ○ (MD-B during the terminal is grounding) | ○ (timer) | × |
| EXT or MD-A | ○ (button) | ○ (EXT or MD-A) | ○ (timer) | ○ (EXT or MD-A) | ○ (timer) | ○ (EXT) |
| EXT or MD-B | ○ (button) | ○ (EXT or MD-B) | ○ (timer) | ○ (EXT or MD-B) | ○ (timer) | ○ (EXT) |

○ (button): Recording starts when the REC/STOP button on the front panel of the recorder is pressed.
○ (EXT): Normal recording or alarm recording starts when a signal is input to the ALARM IN terminal on the rear panel of the recorder.
○ (MD): Normal recording or alarm recording starts when motion is detected.
○ (timer): Normal recording or alarm recording starts according to the timer recording settings.
× : Neither normal recording or alarm recording is performed.

Notice

- When the total FPS of all the recordings being performed is around the following values, they may not be performed according to the specified settings.

  When the total FPS is around the following values, you cannot view images from the inactive cameras via the network.

  When the picture size is set to [4CIF].....120 FPS
  When the picture size is set to [2CIF].....240 FPS
  When the picture size is set to [CIF].....480 FPS

Tips

- <Estimated time>
  - [Estimated time] is displayed at the bottom of the screen, which shows the maximum continuous recording time at the picture quality and FPS for normal recording.
  - When you change the capacity of the normal recording area in the partition setting, the estimated time is displayed according to the specified capacity.
  - The estimated time is just for a guide. Depending on the recorded images, the actual recording time may vary considerably. As more motion images are recorded, the actual recording time may become shorter than the estimated time.
- When the sum of each FPS is around the following values, [Total FPS] is displayed in red and an error message appears. In this case, decrease the FPS.

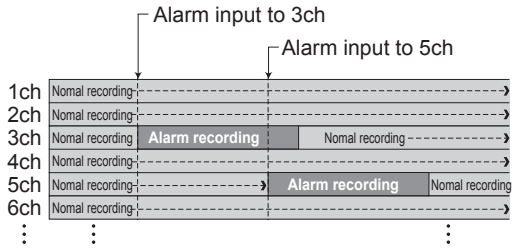
  When the picture size is set to [4CIF].....120 FPS
  When the picture size is set to [2CIF].....240 FPS
  When the picture size is set to [CIF].....480 FPS
- [Total FPS] shows the sum of the larger values between the FPS for normal recording and that for alarm recording of the selected cameras. (The value displayed in [Total FPS] is not same as the sum of the displayed FPS.)

## Alarm camera setting

**Step 10 Select recording cameras for each connected sensor.**

- Alarm recording is performed with selected cameras.
- When an alarm signal is input during normal recording, images from cameras selected for alarm recording are recorded at the alarm recording FPS rate while images from the other cameras are recorded at the normal recording FPS rate. The maximum total of the alarm recording FPS and normal recording FPS of the selected cameras is as follows.

  When the picture size is set to [4CIF] ..... 120 FPS
  When the picture size is set to [2CIF] .....240 FPS
  When the picture size is set to [CIF] .....480 FPS




- When the setting is completed, select [Next]. The <Alarm input/output> screen is displayed.

Tips

- You can select multiple cameras per sensor input.

## Alarm input/output

**Step 11 Select the trigger for starting alarm recording for each connected sensor.**

**[EXT&MD-A]:** Alarm recording starts when Motion A is detected while the ALARM IN terminal is being grounded.

**[EXT&MD-B]:** Alarm recording starts when Motion B is detected while the ALARM IN terminal is being grounded.

**[EXT]:** Alarm recording starts only when the ALARM IN terminal is grounded.

**[EXTorMD-A]:** Alarm recording starts when the ALARM IN terminal is grounded or Motion A is detected.

**[EXTorMD-B]:** Alarm recording starts when the ALARM IN terminal is grounded or Motion B is detected.

**[MD-A]:** Alarm recording starts only when Motion A is detected.

**[MD-B]:** Alarm recording starts only when Motion B is detected.

**Notice**

- When the trigger for starting alarm recording is other than [EXT] or [EXT&MD], the motion detection function activates immediately after you exit the <Alarm input/output> screen.

  To prohibit alarm signal input, set [Alarm input] on the <Recording settings> screen to [Off]. (☞ page 65)

**Step 12 Select the PTZ camera preset position for the sensors for which the trigger is set to [EXT] in step 11.**

- The cameras selected by [CAM] are moved to the preset position selected by [P.set]. (The cameras do not move when the trigger is set to other than [EXT].) For preset position registration, see ☞ pages 45 and 46.

  **[-]:** Camera does not move.

- Up to 3 cameras can be moved.

**Example**

| Sensor | | CAM | P.set |
|---|---|---|---|
| 1 | EXT | 1 | 01 |

When the ALARM IN terminal corresponding to Sensor 1 is grounded, Camera 1 moves to the preset position 01.

## Supplementary explanations on recording settings

### Alarm recording

- When alarm recording or emergency recording is performed during timer recording, the end time of the timer recording is put off till the completion of the alarm recording or the emergency recording.
- When the alarm recording time is set to [Manual], the recording time of motion detection recording is 5 seconds.
- When a power failure occurs during alarm recording or emergency recording, the alarm recording or the emergency recording resumes after the recovery from the power failure. The cumulative recording time before the power failure is reset and it starts from the beginning again.
- When alarm signals are input to multiple sensors at the same time, the recorder may not register all the alarm events to the alarm list.

### Frame recording

- When the picture size is set to [4CIF] or [CIF], images are recorded frame by frame. When you play back recorded images having rapid motion, they may appear shaking. When such shaking images are annoying, see "Display a playback image in field" (☞ page 112).

### Caution in changing recording operations

- When the picture size or recording rate changes due to the change of recording operation (for example, from normal recording to alarm recording, from normal recording to emergency recording, switching the timer operation), the recording may be interrupted temporarily (for approximately one second). The interruption time becomes longer as the load of the recorder increases.
- In the case that there is a large difference between the picture qualities for normal recording and alarm recording, the recorder may take time to achieve the designated picture quality when the recording mode changes from normal recording to alarm recording or from alarm recording to normal recording.

## Supplementary explanations on preliminary recording

Preliminary recording is a function to start recording maximum 30 minutes before the start of alarm recording or emergency recording.

### Picture quality and FPS

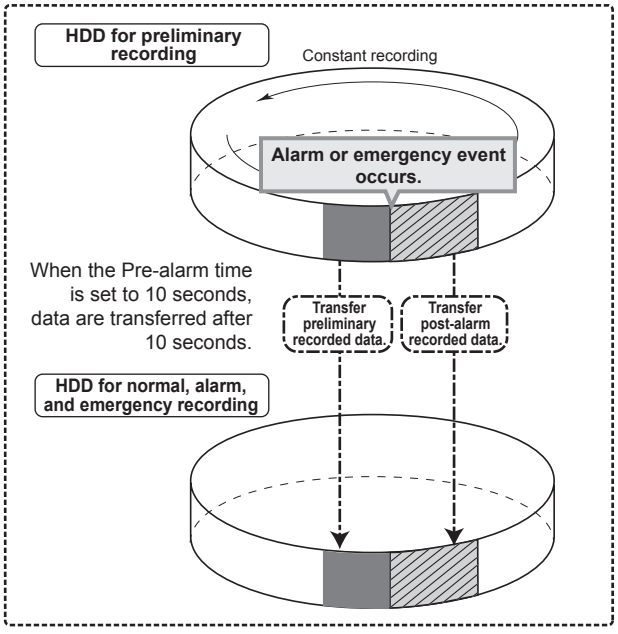
- The picture quality and FPS of the normal recording or alarm recording being executed are applied to the preliminary recording.
- When executing preliminary recording and normal recording or alarm recording at the same time, set the picture quality and FPS, considering that preliminary recording is always performed in the background. Depending on the settings, images may be dropped during recording.
- When the FPS for both normal and alarm recordings are set to [---], preliminary recording is not performed even if the recording time is specified.
- In the case of recording to serial bus HDDs, the transmission rate decreases. Check in advance that data are recorded without dropping.

### Recording cameras

- Cameras you want to use for preliminary recording should be selected for normal or alarm recording.

### System of alarm recording and emergency recording

- When preliminary recording is enabled for alarm recording or emergency recording, data are always recorded to the HDD for preliminary recording. When an alarm or emergency event occurs, the preliminary recorded data and post-alarm recorded data are transferred to the HDD for normal, alarm, and emergency recording.
- Normal- and alarm-recorded data are transferred with a delay of the designated Pre-alarm time. Therefore, to retrieve the latest recorded data, search the data in the HDD (Preliminary) using the time date search. Data are not saved in the HDD (Preliminary) when the preliminary recording is disabled.


HDD for preliminary recording
Constant recording
Alarm or emergency event occurs.
When the Pre-alarm time is set to 10 seconds, data are transferred after 10 seconds.
Transfer preliminary recorded data.
Transfer post-alarm recorded data.
HDD for normal, alarm, and emergency recording

### HDD used for recording

- Pre-recorded data of alarm recording or emergency recording are stored in the dedicated areas in 2 built-in HDDs. When only 1 built-in HDD is available, the amount of pre-recorded data that can be stored may decrease.

  When both built-in HDDs are unavailable, pre-recorded data are not stored. In addition, you cannot set or change the preliminary recording settings

  Before starting the practical operation of the recorder, check that both built-in HDDs are ready for use.

## Emergency recording settings

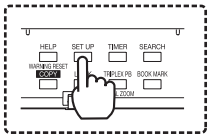
**<EMR recording>**

You can make settings for emergency recording. When the EMERGENCY terminal is grounded by the alarm sensor while both of the MAIN switch on the rear panel and the POWER button on the front panel of the recorder are ON, the recorder automatically starts emergency recording, overriding the other operations even though it is in the stop mode or it is performing timer recording.

**Notice**

- The recorder does not perform emergency recording when the MAIN switch or the POWER button is OFF or it is in the timer recording stand-by mode.
- You cannot change the settings made on the <EMR recording> screen during normal recording or alarm recording. To change the settings during normal recording, stop recording. During alarm recording, when you set [Alarm input] on the <Recording settings> screen (☞ page 65) to [Off], receipt of alarm inputs is prohibited for 5 minutes. Stop recording during this period and change the emergency recording settings.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




**or**

- <Main menu> is displayed.

**Step 2 Select [Recording setting].**

- The <Recording setting> screen is displayed.

**Step 3 Select [Setting] next to [Manual setting].**

- The <Recording settings> screen is displayed.

**Step 4 Select [Setting] next to [EMR recording].**

- The <EMR recording> screen is displayed.

**Step 5 Select the picture size for emergency recording and select [Execute].**

**[4CIF]:** 704x480. The maximum FPS rate is 120.

**[2CIF]:** 704x240. The maximum FPS rate is 240.

**[CIF]:** 352x240. The maximum FPS rate is 480.

**Notice**

- When you change the picture size, the FPS rate is initialized.

**Step 6 Select cameras used for emergency recording.**

- The cameras selected in the [Recording cameras] area are used for recording.

**Step 7 Set the FPS for emergency recording.**

**Tips**

- When the sum of each FPS is around the following values, [Total FPS] is displayed in red and an error message appears. In this case, decrease the FPS.

  When the picture size is set to [4CIF]...120 FPS
  When the picture size is set to [2CIF]...240 FPS
  When the picture size is set to [CIF].....480 FPS

**Step 8 Set the pre-emergency recording time in [Pre-alarm time].**

**[0 Sec]:** Pre-emergency recording is not performed.

- Note that the actual pre-emergency recording time may become shorter than the specified time because of HDD malfunction or other failure.

**Step 9 Set the emergency recording time in [Post-alarm time].**

**[Manual]:** Emergency recording continues until the grounding of the EMERGENCY terminal ceases.

**Notice**

- Ensure that the Pre-alarm time is shorter than the Post-alarm time.

## Supplementary explanations on emergency recording

### Picture quality

- The picture quality is fixed to [L9].

### Indications during emergency recording

- "Ⓔ" is displayed on the screen in red.
- ● is displayed in red next to the camera number on the screen (only when the camera number indication is enabled).
- The camera number buttons on the front panel of the recorder corresponding to the cameras being used for emergency recording blinks.

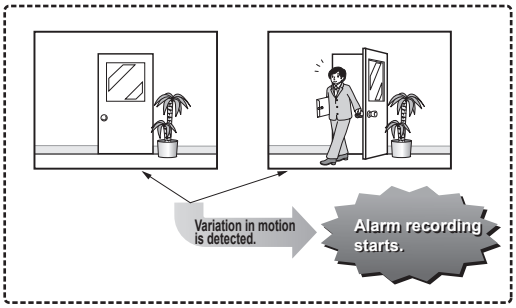
### Others

- When a power failure occurs during emergency recording, the emergency recording resumes after recovery from the power failure and the recorder continues recording for the time specified in [Post-alarm time].
- When emergency recording is performed during timer recording, the end time of the timer recording is put off till the completion of the emergency recording. Upon the completion of the emergency recording, the timer recording ends.
- The emergency recording events are registered to the alarm list and EMR is displayed on the list.

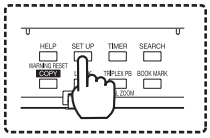
## Motion detection settings

<Motion detection>

Based on the motion detection conditions, the recorder starts alarm recording when it detects variation in motion in the image captured by the connected camera. You can set 2 patterns of motion detection conditions. (MD-A/MD-B)




**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [Recording setting].**

- The <Recording setting> screen is displayed.

**Step 3 Select [Setting] next to [Manual setting].**

Setting

- The <Recording settings> screen is displayed.

**Step 4 Select [Setting] next to [Motion detection].**

Setting

- The <Motion detection setting> screen is displayed.

**Step 5 Select a camera used for motion detection in [Camera selection].**

1

- You can make motion detection settings for each camera.

**Notice**

- The motion detection function does not work while the Motion detection setting screen is displayed.

**Step 6 Set the detection sensitivity to variation in the loaded image.**

High

- The detection sensitivity has 5 levels according to the variation in brightness.

**Tips**

- When the sensitivity is set to [High], the motion detection function may detect even flickering of the fluorescent light, etc.

**Step 7 Set the motion detection threshold.**

0 0 5

- Set the motion detection threshold (or the minimum number of cells to the number of active cells in the detection area) for starting the motion detection operation.
- The motion detection function activates when it detects variation exceeding the threshold.

**Notice**

- You can set the number of active cells in the detection area at the maximum in [MD threshold]. When you set a value exceeding that number, it turns to red. In this case, decrease the value.

**Step 8 Set the detection interval.**

0.5sec

- You can select the detection interval. By setting the detection interval, the motion detection detects objects that move fast and slowly separately. For effective detection, set the interval long for objects that move slowly and set it short for objects that move fast.

**Step 9 Set the detection area.**

- When you select [Setting] next to [Mask set], the screen for setting the detection area is displayed.

Setting

**[All area]:** The setting screen is displayed with all the cells in the detection area set active.

**[No area]:** The setting screen is displayed with all the cells in the detection area set inactive.

**[User A], [User B]:** The setting screen is displayed with the current detection area setting maintained.

**[Copy Setting B], [Copy Setting A]:** The setting screen is displayed with the detection area setting of the other pattern. The settings made in this step are saved as [User A] or [User B].

- Display the desired setting pattern and select [Execute]. The setting screen is displayed.
- You can set any of 418 cells in the detection area.
- Active cells are indicated in red, inactive cells are indicated in blue, and cells being set are colorless.

Notice

- When you want to change the detection area setting of the camera already set, select [User A] or [User B]. Otherwise, the detection area setting is reset to the default.

**[Setting by the mouse]**

**■ To set the cells one by one**

1 Left-click a desired cell to turn it red.

Every time you click, the cell turns red (active), blue (inactive) and colorless (being set).

**■ To set multiple cells at a time**

1 Left-click on the start point cell until it becomes colorless, and then left-click on the end point cell.

The selected area is enclosed by a yellow frame and the cells within the frame are displayed colorless.

2 Left-click the mouse in the selected area.

Every time you click, the area changes between active and inactive.

3 After setting the area active or inactive, left-click outside the yellow frame or right-click in the yellow frame.

The setting is completed.

**[Setting by the buttons on the front panel of the recorder]**

**■ To set the cells one by one**

1 Select a cell using the ▲, ▼, ◀, and ▶ (camera number 11, 14, 15, and 16) buttons and press the ENTER (camera number 12) button.

Every time you press the button, the cell turns red (active), blue (inactive), and colorless (being set).

**■ To set multiple cells at a time**

1 Select the start point cell using the ▲, ▼, ◀, and ▶ buttons and then press the ENTER button until it becomes colorless.

2 Select the end point cell using the ▲, ▼, ◀, and ▶ buttons and press the ENTER button.

The selected area is enclosed by a yellow frame and the cells within the frame are displayed colorless. Every time you press the ENTER button, the selected area changes between active and inactive.

3 After setting the area active or inactive, press the ▲, ▼, ◀, or ▶ button.

The setting is completed.

Tips

- You can set multiple active areas per camera.
- The image captured by the selected camera is displayed as the background.

**Step 10 Click [Test] to check that the motion detection function operates according to the settings you made.**

- The color of the cells that detect motion changes.

**Cautions on motion detection setting**

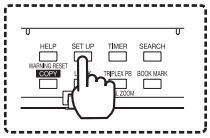
- When variation is detected continuously, alarm recording is also continuously performed. Therefore, you cannot change the recording settings, etc. In this case, you can suspend the motion detection function forcibly for 5 minutes by setting [Alarm input] on the <Recording settings> screen to [Off]. When you stop recording during this period, you can change the recording settings, etc. The motion detection function automatically resumes in 5 minutes and this is registered to the system log list. To cancel the prohibition of alarm input manually, set [Alarm input] to [On].
- When both the ALARM IN terminal on the rear panel and the motion detection are selected as the trigger for starting alarm recording, the ALARM IN terminal takes priority when both events occur simultaneously.
- The M-DET indicator illuminates while the motion detection function is in operation.
- The motion detection function of this recorder may not operate correctly depending on the conditions of input video signals especially when the motion detection sensitivity is set to high level. Be careful when the recorder is connected to the system that issues an alarm using the motion detection function of this recorder.
- To perform alarm recording by motion detection, set [Input] of [Alarm input/output] to [MD-A], [MD-B], [EXTorMD-A], [EXTorMD-B], [EXT&MD-A], or [EXT&MD-B], and set the FPS for alarm recording of the selected cameras to other than [---].
- The motion detection function of this recorder detects motion by detecting variation in brightness. Therefore, the function may malfunction because of change in the lighting or sunlight or may fail to detect under such condition as that a person is wearing the same color of clothes as the background. Be sure to test the function sufficiently before starting the practical operation.
- When alarms by motion detection occur quite frequently, the recorder's operations such as alarm recording, communication, and screen display may become slow. It is recommended to use normal recording for monitoring places where motion is constantly detected.

## Audio recording settings

**<Audio recording>**

You can make settings for audio recording. You can record audio together with images from Camera 1. When you enable audio recording, the maximum continuous recording duration becomes shorter than that when not recording audio.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




**or**

- <Main menu> is displayed.

**Step 2 Select [Recording setting].**

- The <Recording setting> screen is displayed.

**Step 3 Select [Setting] next to [Manual setting].**

- The <Recording settings> screen is displayed.

**Step 4 Select [Setting] next to [Audio recording].**

- The <Audio recording settings> screen is displayed.

**Step 5 Select whether or not to record audio.**

- When you put a checkmark, audio is recorded together with the images from Camera 1.

**Step 6 Set the audio quality.**

**[Normal]:** Audio at 12 kHz sampling frequency.

**[Economy]:** Audio at 8 kHz sampling frequency.

**Step 7 Set the recording mode.**

**[Constant]:** Audio is recorded constantly during recording (normal recording, alarm recording or emergency recording).

**[Alarm]:** Audio is recorded during alarm recording or emergency recording.

**Notice**

- When images from Camera 1 are not recorded, audio is not recorded even when audio recording is enabled.
- When the recording mode changes from normal recording to alarm recording or from alarm recording to normal recording, audio may be interrupted temporarily, but this is not a malfunction.
- When you create an alarm recording area by partition setting and set [Recording mode] to [Alarm], audio is recorded to the alarm recording area together with images. (☞ Page 41)
- To copy the recorded audio as digital data, copy images from at least one camera.

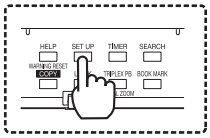
  You can hear the live audio any time except during playback. The live audio changes to playback audio when you start playback or triplex playback.

## Stopping alarm input

You can stop alarm input manually.

You cannot change the settings on the <Recording setting> screen during recording. To make recording settings while alarm recording is performed continuously, use this function to prohibit alarm input temporarily and stop recording.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




**or**

- <Main menu> is displayed.

**Step 2 Select [Recording setting].**

- The <Recording setting> screen is displayed.

**Step 3 Select [Setting] next to [Manual setting].**

- The <Recording settings> screen is displayed.

**Step 4 Set [Alarm input].**

- When you select [Off], alarm input is prohibited for 5 minutes.

  This function is effective to the ALARM IN terminal on the rear panel, motion detection input, emergency input and communication port input. Alarm input prohibition is automatically canceled in 5 minutes.

  To cancel the prohibition manually, select [On] and close the <Recording setting> screen.

## Manual recording

This section describes the method of normal recording by manual operation.

### Before starting manual recording

**Notice**

- Use <Recording A> to perform manual recording. Select [Auto setting] or [Manual setting] to set the picture quality and FPS for normal recording. (☞ pages 54 to 58)

**Tips**

- You can use only <Recording A> for manual recording. <Recording B> to <Recording D> are for timer recording only. <Recording A> can be also used for timer recording.

  Use the <Timer program> screen (☞ pages 66 to 69) to make settings for timer recording.

**Step 1 Press the REC/STOP button.**

- The REC/STOP button illuminates and recording starts.

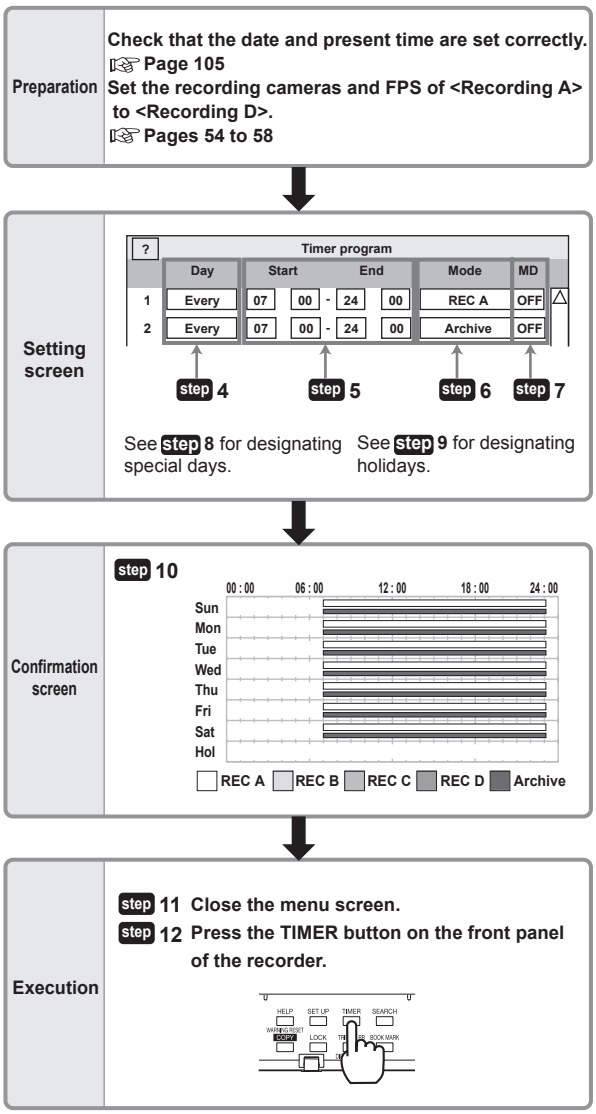
**Step 2 To stop recording, press the REC/STOP button for 2 seconds or longer.**

- The recording stops and the REC/STOP button goes out.

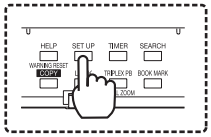
## Timer recording settings

**<Timer program>**

You can make settings for timer recording. By setting the recording cameras, FPS, and picture quality for normal recording/alarm recording individually for <Recording A> to <Recording D>, you can change the recording pattern instantly by changing [Mode].




**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [Recording setting].**

- The <Recording setting> screen is displayed.

**Step 3 Select [Setting] next to [Timer program setting].**

- The <Timer program> screen is displayed.

**Step 4 [Day]**

**[Sun] to [Sat]:** Recording is performed on the designated day of the week.

**[Every]:** Recording is performed at the programmed time everyday.

**[SPL1 to 3]:** Recording is performed on the days designated as special day in step 8.

**[Holiday]:** Recording is performed on the days designated as holiday in step 9. Holiday program is performed with the highest priority, regardless of the program number.

**Step 5 [Start], [End]**

Set the start time and end time of recording. (The time is indicated by the 24-hour system.)

**Step 6 [Mode]**

**[REC A] to [REC D]:** Recording is performed according to the settings of <Recording A> to <Recording D> (☞ pages 54 to 58).

**[Archive]:** Data are archived to the archive device. When you select [Archive], make settings for archive on the <Archive> screen (☞ page 83).

**[Skip]:** The timer recording is suspended temporarily. (Recording is not performed for the designated period.)

**Notice**

- When you archive data by timer recording, set the start and end times so that the archive time is 10 minutes or longer.

**Step 7 [MD] (☞ page 56)**

**[ON]:** Alarm recording by motion detection is performed during timer recording.

**[OFF]:** Alarm recording by motion detection is not performed during timer recording.

**Notice**

- For example, when you select [REC A] in step 6 and set [MD] to [ON] in step 7, the motion detection operation is performed by the trigger of Recording A. When the trigger for starting alarm recording is [EXT], motion detection recording is not performed by timer recording even when [MD] is [ON]. (☞ page 58)
- In the case that the trigger for starting alarm recording is set to [EXT&MD-A] or [EXT&MD-B] on the <Recording setting> screen, when you set [MD] to [OFF] on the Timer setting screen, alarm recording is not performed even though the ALARM IN terminal is grounded.

**Step 8 Set special days.**

- When you select [Setting], the screen for setting special days and holidays is displayed.

- When you select [SPL] in the [Day] column in step 4, the period designated in this step is applied.
- You can set up to 3 patterns of special days.

**Step 9 Set holidays.**

- You can designate dates to be considered as holiday.

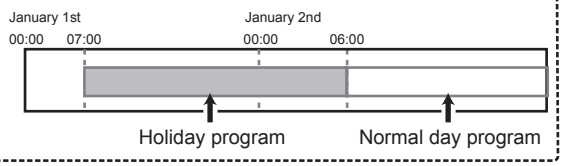
  When you select [Holiday] in the [Day] column in step 4, the dates designated in this step are applied.

**Notice**

- When you designate a holiday program with the end time beyond 00:00, the recorder performs the holiday program till the end time and then starts a normal day program.

**Example** **When you set January 1st as holiday:**

January 1st 07:00 - January 2nd 06:00 Holiday program
January 2nd 06:00 - Normal day program




- In the case that a normal day program and a holiday program are designed to continue beyond 00:00 (for example, 20:00 to 07:00) and the end time of the holiday program is within the recording period of the normal day program, the recorder does not start the normal day program. After the holiday program ends, the recorder performs the next coming normal day program.

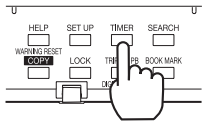
  To set timer recording for 24 hours a day, you are recommended to set the program time as 00:00 to 00:00.

**Step 10 To check the timer recording settings, select [Next] on the <Timer program> screen.**

- The <Program confirmation> screen is displayed.

**Step 11 Close the menu screen.**

**Step 12 Press the TIMER button on the front panel of the recorder.**

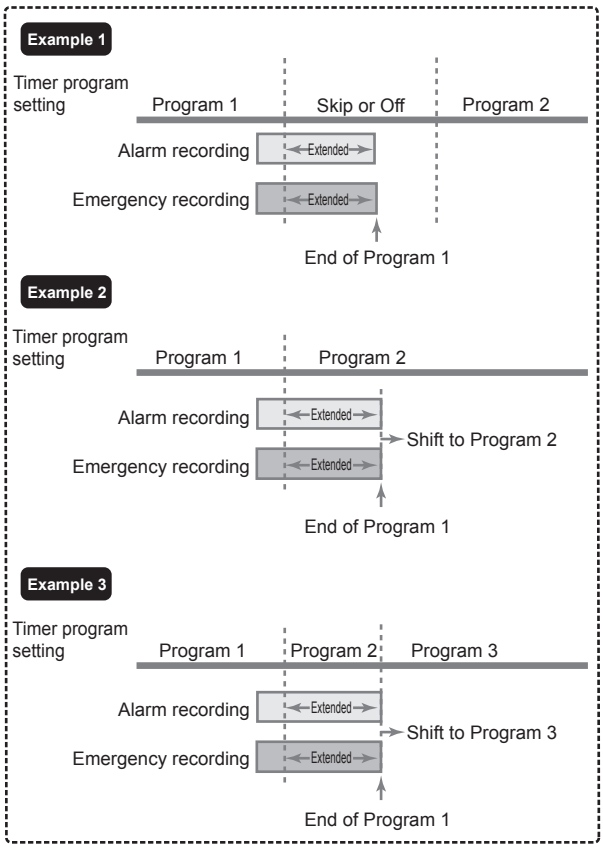



- The TIMER indicator illuminates.
- The power turns off and the recorder enters the timer recording stand-by mode. The power is turned on about 3 minutes before the start time of timer recording. The recording starts from the start time of timer recording.

  When the present time is within the timer recording operation time, timer recording starts.
- Timer recording and timer recording stand-by mode are canceled when you hold down the TIMER button for 2 seconds or longer.

**Notice**

- When you set holidays using the holiday setting screen and select [Holiday] in the [Day] column, that program always takes priority.
- When the timer recording is performed on the external HDD, the recording time may become several seconds shorter than the designated time.
- When alarm recording starts during timer recording, the alarm recording continues even when the timer recording end time comes. The timer recording ends when the alarm recording ends.
- When alarm or emergency recording starts during timer recording, the alarm or emergency recording continues for the specified recording time even if the start time of the next timer program comes. After the completion of the alarm or emergency recording, the next coming timer program starts.




**Recording is not performed correctly if there is an error in the settings. To prevent such errors, this recorder notifies the user of errors using following methods. If there is an error in the settings, take necessary procedures.**

| Recorder status | Description of error | Countermeasure | Page |
|---|---|---|---|
| The TIMER indicator blinks. (The series of short beeps sounds.) | 1) The timer program has not been set. | 1) Set the timer program. | 66-68 |
| The TIMER button does not work. | 1) A menu is being displayed.<br>2) Program setting is underway. | • Close the menus. | - |
| Timer recording does not start when the program start time comes. | 1) HDD space runs out when the repeat recording is disabled.<br>2) Clock is not correct.<br>3) Program settings are not correct. | • Clear the warning indication.<br>• Enable the repeat recording.<br>• Set the clock correctly.<br>• Check the settings on the confirmation screen. | 134<br>40<br>105<br>66,67 |

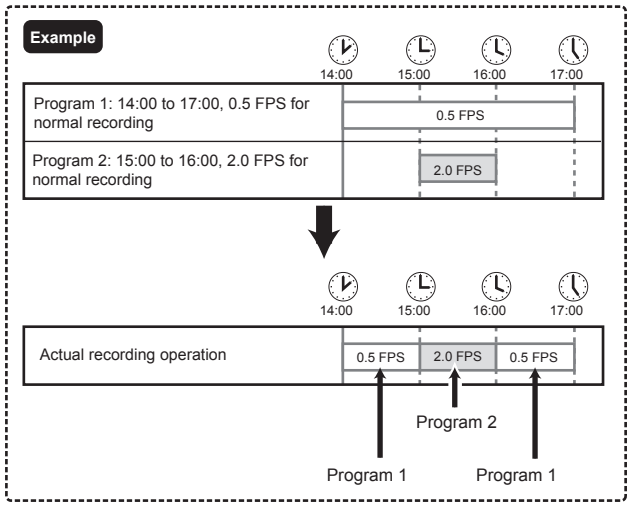
## When timer programs overlap

When 2 or more programs overlap, one having the largest program number is executed.

**Example 1)**

- Program 1: 14:00 to 17:00, 0.5 FPS for normal recording
- Program 2: 15:00 to 16:00, 2.0 FPS for normal recording

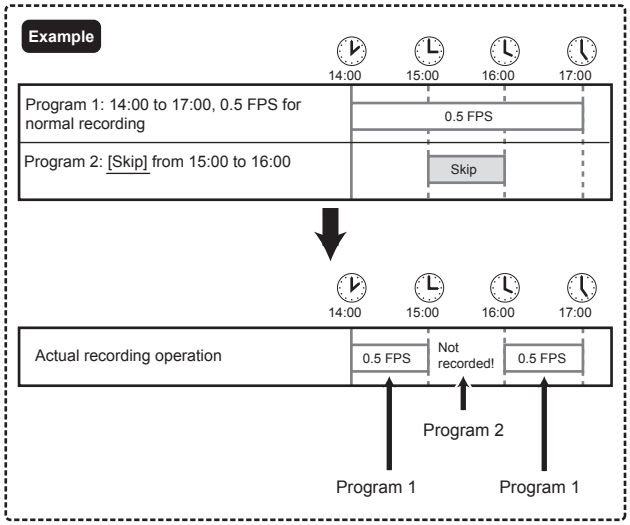
These programs overlap between 15:00 and 16:00. In this case, Program 2 takes priority and the recorder operates as shown in the illustration below.




**Example 2)**

- Program 1: 14:00 to 17:00, 0.5 FPS for normal recording
- Program 2: [Skip] from 15:00 to 16:00

These programs overlap between 15:00 and 16:00. In this case, Program 2 takes priority and the recorder does not perform recording from 15:00 to 16:00 as shown in the illustration below.

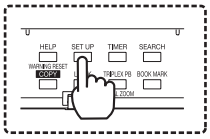


## Selecting the playback device

<Device selection>

You can select the device and audio for playback.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [Device selection].**

- The <Change audio and play device> screen is displayed.

**Step 3 Select the device you want to play under [Play device selection].**

**Notice**

- You cannot select devices that are not registered. (You can select DVD/CD and USB memory.)
- You can change the playback device only while playback is stopped.
- When you change the playback device on the <Change audio and play device> screen and then start playback with that screen being displayed, data in the device that was selected before the change are played. Before starting playback, close the screen.

**Step 4 Select the audio you want to output under [Audio channel selection].**

- The setting made in this step is applied to both live image display and playback.

  **[Audio A1]:** Audio 1 is output.

  **[Audio A2]:** Audio 2 is output.

  **[Off]:** No audio is output.

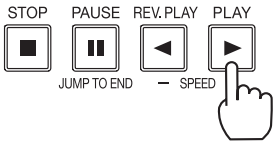
**Notice**

- Settings are retained even when the MAIN switch on the rear panel of the recorder is turned off or when a power failure occurs.

## Playing back recorded data

You can play back recorded data. This recorder is able to play back recorded images by various methods. The most basic playback method is described below.

**Step 1 Press the PLAY button inside the door on the front panel of the recorder.**




- The recorder plays back data stored in the device you selected in the above procedure "Selecting the playback device."
- After the power is turned on, playback starts from the oldest recorded data. Otherwise, playback starts from the point where it was stopped last time.
- When images are played back in the 10-, 13-, or 16-split screen mode, black bars appear at the top and bottom of 1/16-size images.

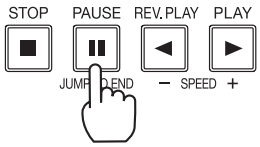
**Notice**

- When you change the multiplexer, playback direction, or playback speed during playback, a black screen may be displayed.
- When you change the multiplexer or the playback-related settings during playback, or when you play back data where recording status was changed due to change of recording operation, a black screen may be displayed or image dropout may occur.
- This recorder uses the motion picture compression format. Due to this, the recorder may take time to display the playback picture.
- When the picture size or recording rate changes due to the change of recording operation (for example, from normal recording to alarm recording, from normal recording to emergency recording, switching the timer operation), the recording may be interrupted temporarily (for approximately one second). The interruption time becomes longer as the load of the recorder increases.

**Tips**

- When [Activate repeat playback] (☞ page 111) is disabled, playback stops when reaching the physical end of the HDD or the end of the recorded data. When [Activate repeat playback] is enabled, the recorded data are played back repeatedly.
- When you press the PAUSE/JUMP TO END button while the playback is stopped, images around the end of the latest recorded data are played back in the still image playback mode.
- When you start playback in the sleep mode, [HDD is booting] is displayed.

**Step 2 To pause playback, press the PAUSE button. (Still image playback)**

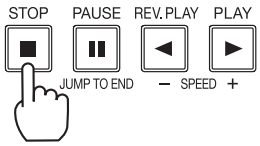



- To resume playback, press the PAUSE or PLAY button.
- When you press a camera number button during still image display in the single screen display mode, the image from the camera corresponding to the button you pressed is displayed. The clock showing the recorded time may gain when you change the camera number to be displayed during still frame playback.

Tips

- Some images may appear shaking because this recorder records images frame by frame, but this is not a malfunction. To curb image shaking during playback, select [Display a playback image in field]. (☞ Page 112)
- When you press a camera number button during still image playback in order to display images in the single screen display mode, no images may be displayed because of absence of recorded images from the camera or the timing of still image display.
- In the field display mode, the odd images are displayed.

**Step 3 To stop playback, press the STOP button.**




- When you start playback next time, playback resumes from the point where it was stopped last time.

Tips

- The playback speed of each camera may not be constant depending on the recording conditions.
- In the split screen display mode, the playback rate may be lower than the recording data.

# Searching for images you want to view

To search for images using <Search menu>, there are 5 methods as follows:

■ **Start point search**

The oldest recorded image is searched for.

■ **End point search**

The latest recorded image is searched for.

■ **Time and date search**

Images are searched based on the date and time you designate.

■ **Alarm list search**

Images are searched using the list of dates and times when alarm recording and emergency recording started.

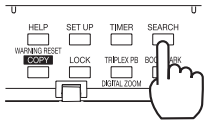
■ **MD search**

Images from cameras that detected motion are searched.

## Searching for the oldest recorded data

**<Start point search>**

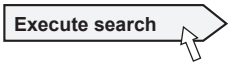
**Step 1 Press the SEARCH button on the front panel of the recorder.**




- <Search menu> is displayed.
- You can display this menu also from the mouse operation menu. (☞ Pages 32 to 33)

**Step 2 Select a device to search under [Play device].**

**Step 3 Select [Execute search].**




- A still image of the oldest recorded data stored in the selected device is displayed in the single screen display mode.
- You cannot select a camera for search.

**Tips**

- You can manipulate the image displayed as search result using the buttons displayed on the search result screen.

  Following buttons are operated by a mouse only.

  [⇙]: Each time you click this button, the size of the search result screen changes. Each time you click this button, it changes between ⇙ and ⇗. Click ⇙ to display the image on the entire screen and click ⇗ to display the image on one-quarter of the screen. Images recorded in the CIF size cannot be displayed on the entire screen.

  [⏮]: Each time you click this button, the reverse playback speed changes in the order of approx. X2 → approx. X4 → approx. X8 → approx. X16 → high-speed playback → approx. X2.

  [⏭]: When you click this button, reverse frame-by-frame playback starts.

  [◀]: When you click this button, reverse playback starts.

  [■]: When you click this button, playback/reverse playback stops.

  [⏸]: When you click this button, playback/reverse playback pauses.

  [⏭]: When you click this button, frame-by-frame playback starts.

  [▶]: When you click this button, playback starts.

  [⏩]: Each time you click this button, the playback speed changes in the order of approx. X2 → approx. X4 → approx. X8 → approx. X16 → high-speed playback→ approx. X2.

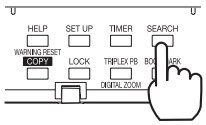
**Notice**

- The intended playback speed may not be obtained when a heavy load is imposed on the recorder or when the high-speed data transmission is unavailable due to the use of a DVD/CD , USB memory, or external HDD.

## Searching for the latest recorded data

**<End point search>**

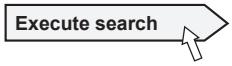
**Step 1 Press the SEARCH button on the front panel of the recorder.**




- <Search menu> is displayed.
- You can display this menu also from the mouse operation menu. (☞ Pages 32 to 33)

**Step 2 Select a device to search under [Play device].**

**Step 3 Select [Execute search].**




- A still image of the latest recorded data stored in the selected device is displayed in the single screen display mode.
- You cannot select a camera for search.

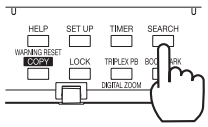
Tips

- When you press the PAUSE/JUMP TO END button while the playback is stopped, images around the end of the latest recorded data are played back in the still image playback mode. (☞ Page 78) (The point to be searched is different from that searched by the End point search.)
- The range of playback may become narrower than that defined by the recording start and end times being displayed.
- When the <Search menu> is displayed during playback, playback stops.

## Setting the searching conditions

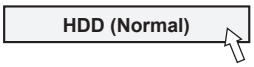
You can designate a device, camera, and time as search conditions.

**Step 1 Press the SEARCH button on the front panel of the recorder.**




- <Search menu> is displayed.
- You can display this menu also from the mouse operation menu. (☞ Pages 32 to 33)

**Step 2 Select a device to search under [Play device].**




**[HDD (Normal)]:** Data in the normal recording area are searched.

**[HDD (Alarm)]:** Data in the alarm recording area are searched.

**[HDD (Emergency)]:** Data in the emergency recording area are searched.

**[HDD (Copy)]:** Data in the copy device are searched.

**[HDD (Archive)]:** Data in the archive device are searched.

**[HDD (Preliminary)]:** Data in the pre-recorded area for alarm or emergency recording are searched.

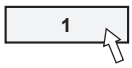
**[DVD/CD]:** Data on a DVD/CD disc are searched.

**[USB memory]:** Data in a USB memory device are searched.

Notice

- For searching data in the HDD (Preliminary), you can use time date search only.
- When the area with its capacity set to 0% in the partition setting is designated as the playback/search device, playback and search cannot be performed. Therefore, select the device available for playback in [Play device].
- When you copy or search the data recorded on a DVD/CD or USB memory, it may take some time before the media is completely recognized after inserted. Before you perform copy or search, check whether the access lamp of the DVD/CD drive or USB memory blinks.

**Step 3 Select the number of the camera you want to search in [Camera filter].**




**Step 4 Designate the date and time to search.**

- There are 2 methods to designate the date and time to search, one is entering the date and time directly and the other is designating the date and time using a calendar.

**[To designate the date and time by entering directly]**

**Step 4-1 Click on each of month, day, year, hour, minute, and second on the <Search menu> screen until the desired value appears.**

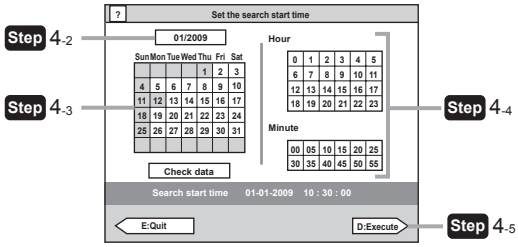
**[To designate the date and time using a calendar]**

**Step 4-1 Select [Time and date].**

- The <Set the search start time> screen is displayed.

**Step 4-2 Select the year and month to search.**

- The calendar of the selected year and month appears.




**[Check data]:** Click to check whether the selected device contains recorded data or not. Dates having recorded data are displayed in gray and dates without recorded data are displayed in black.

When recording data exist after the last retrieved date in the selected month, those data aren't detected.

**Step 4-3 Select the date to search.**

**Step 4-4 Select the hour and minute to search.**

**Step 4-5 Select [Execute].**

- The date and time designated in steps 4-2 to 4-4 are displayed as the search start time and the <Search menu> screen is displayed.

## Searching images based on the designated date and time

<Time date search>

You can search for images by designating their recording date and time.

**Step 1 Set the search conditions.**

- According to ☞ "Setting the searching conditions" in the left column, designate the device, camera, and time to search

**Step 2 Select [Search].**

- The image recorded on the designated date and time is displayed in the still image display mode.

**Step 3 To play back the image displayed as search result, press the PLAY button or the PAUSE button on the front panel of the recorder.**

- To stop playback, press the STOP button.
- With a mouse, you can play back the image using the buttons displayed on the search result screen. (☞ Page 72)

Tips

- When there is no data recorded at the designated time, the image from the same camera recorded at the time closest to the designated time is displayed in the still image playback mode. (The recorder searches data 1 hour before and after the designated time.)
- When there are multiple data recorded at the same time on the same date, repeat search several times until the desired image is retrieved.
- Depending on the recording condition, the recorder may not be able to search data correctly.

## Searching from the alarm list

<Alarm list search>

At the start of alarm recording or emergency recording, this recorder adds the recording start time to the alarm list. You can search for the desired image from the start times of alarm recording (or emergency recording) shown in the alarm list.

**Step 1 Set the search conditions.**

- According to "Setting the searching conditions" on ☞ page 73, designate the device, camera, and time to search.

  The alarm list shows 10 alarm events occurring on or before the date and time designated on the <Search menu>.

Notice

- To perform alarm list search when the alarm recording area and emergency recording area have been created by the partition setting, designate the device to search as [HDD (Alarm)] and [HDD (Emergency)] respectively.
- When the device designated in step 1 doesn't contain images at the start point of alarm or emergency recording, that recording cannot be searched by the alarm list search.

**Step 2 Select [Search] next to [Alarm list search].**

- The alarm list shows 10 alarm events occurring on or before the date and time designated on the <Search menu>.
- By clicking the ▲ button or the ▼ button, you can search every 10 or 100 alarm events.

  **[New]:** Latest 10 alarm events are displayed.

  **[Old]:** Oldest 10 alarm events are displayed.

  **[Type]:** For alarm events occurring when the ALARM IN terminal on the rear panel is grounded, EXT is displayed. For those occurring when motion is detected, MD is displayed. For those occurring when the EMERGENCY terminal is grounded, EMR is displayed. For those occurring when an alarm signal is input via the network, LAN is displayed.

**Step 3 Click the date and time of the alarm event you want to view.**

- The image of the selected alarm event is displayed in the still image display mode.
- By clicking the ▲ button or the ▼ button on the search result screen, you can display the image of the previous or next alarm event.
- You can play back the retrieved image using the buttons on the search result screen (☞ page 72) or the buttons on the front panel of the recorder.

- The data retrieved by the alarm list search are played repeatedly in both forward and reverse directions. In this repeat playback, a wider range of data than those designated by the Pre-alarm time and Post-alarm time is played.
- When the recording rate is low, the range of data played repeatedly may be extended considerably.

### Copying images registered in the alarm list

**Step 1 Select the alarm event you want to copy on the Alarm list search screen in step 3 of "Searching from the alarm list" on the previous page.**

**Step 2 Select [Add] next to [Copy list].**

- The <Copy list> screen is displayed.
- You can copy up to 8 images registered in the alarm list to the copy device. Upon completion of copying, the alarm events are automatically deleted from the list.

  **[Delete]:** The selected alarm event is deleted.

  **[Delete all]:** All the alarm events in the copy list are deleted.
- By selecting [Confirm] next to [Copy list], you can check the registered alarm events.

**Step 3 Select [Next].**

- The <Copy conditions> screen is displayed.

**Step 4 Select the copy destination device in [Copy to].**

**[DVD/CD]:** Data are copied to a DVD/CD disc. If the available space runs out during copying, you can continue copying by replacing discs.

**[USB memory]:** Data are copied to a USB memory device. When the available space runs out during copying, the recorder stops copying.

**[HDD (Copy)]:** Data are copied to HDD registered as the copy device. When the available space runs out during copying, the recorder stops copying.

**Step 5 Set the copy conditions.**

**[Auto eject]:** Upon completion of copying to a DVD/CD disc, the disc tray is automatically opened. You can select this option only when the copy destination device is [DVD/CD].

**Step 6 Select [Test] to calculate the size of the data to be copied.**

- The recorder may take time to complete the calculation depending on the data size.

**Step 7 Select [Execute copy].**

- The recorder starts copying.
- To stop copying manually, select [Cancel] on the copy process screen. The data copied before you stop remain in the copy destination device.

**Notice**

- When repeat recording to the normal recording area or alarm recording area (☞ page 40) is disabled and alarm recording (or emergency recording) is started at the end of the HDD, that recording may not be registered in the alarm list.
- When you copy an image from a camera that is not corresponding to the alarm sensor number to external media, the alarm list same as that of the recorder cannot be made.

**Tips**

- When the alarm list contains only the small number of alarm events, the recorder may take time to display the alarm list.
- The alarm list shows alarm recording events (or emergency recording events) that occurred on or before the designated date and time, from the one having the recording date and time closest to the designated date and time.
- When multiple alarm events such as motion detection and grounding of the ALARM IN terminal on the rear panel occur at the same time, the recorder may not be able to register all of their start time in the alarm list. In this case, the alarm event of the sensor having the smallest sensor number is registered in the alarm list.
- When you delete data from the HDD, the corresponding alarm event is also deleted from the alarm list.
- To display alarm recording events (or emergency recording events) that started while the alarm list is being displayed, carry out the search again. In this case, it may be required to designate the date and time to search again.

  The list may not be displayed until the recorded data are stored in the HDD. When preliminary recording is enabled, the data are transferred with a delay of the designated time and therefore, the list takes some more time to be displayed.

## Searching for images with motion

<MD search>

By setting the motion detection conditions for playback, you can search for images with motion that meet the conditions you set.

**Step 1 Set the search conditions.**

- According to "Setting the searching conditions" on ☞ page 73, designate the device, camera, and time to search.

  The motion detection list shows 10 motion detection events occurring on or before the date and time designated on the <Search menu>.

**Step 2 Select [Search] next to [MD search].**

- The motion detection list shows 10 motion detection events occurring on or before the date and time designated on the <Search menu>.
- By clicking the ▲ button or the ▼ button, you can search every 1 or 10 events.

**Step 3 Click the date and time of the motion detection event you want to view.**

- The image of the selected motion detection event is displayed in the still image display mode.
- You can play back the retrieved image using the buttons on the search result screen (☞ page 72) or the buttons on the front panel of the recorder.

**Step 4 Change the motion detection search conditions, if necessary.**

- Set the detection area, sensitivity, and motion detection threshold. For the setting method, see ☞ pages 62 and 63.
- The motion detection sensitivity for playback has 2 modes, [Low] and [High].
- When you change the conditions and select [Search], the recorder starts search based on the new conditions.
- The retrieved data are played back for one minute repeatedly in both forward and reverse directions.

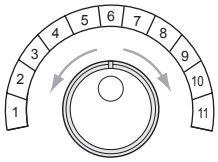
Tips

- The list may not be displayed until the recorded data are stored in the HDD. When preliminary recording is enabled, the data are transferred with a delay of the designated time and therefore, the list takes some more time to be displayed.

## ♦ Shuttle viewing/direct shuttle viewing

By turning the shuttle ring during still image playback or playback/reverse playback, you can change the playback speed.

**Step 1 Turn the shuttle ring during still image playback (shuttle viewing) or playback/reverse playback (direct shuttle viewing).**




1 High-speed reverse search
2 Reverse speed search (approx. X16)
3 Reverse speed search (approx. X8)
4 Reverse speed search (approx. X4)
5 Reverse speed search (approx. X2)
6 Still image playback
7 Forward speed search (approx. X2)
8 Forward speed search (approx. X4)
9 Forward speed search (approx. X8)
10 Forward speed search (approx. X16)
11 High-speed forward search

- The playback speed varies depending on the turning angle of the shuttle ring.
- When you release the shuttle ring, it returns to the center position and the recorder starts still image playback.

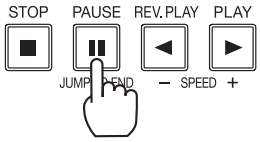
**Notice**

- The intended playback speed may not be obtained when a heavy load is imposed on the recorder or when the high-speed data transmission is unavailable due to the use of a DVD/CD , USB memory, or external HDD.

## ♦ Shuttle hold

Even when you release the shuttle ring during shuttle viewing, the playback speed is maintained.

**Step 1 While turning and holding the shuttle ring at the angle for the desired playback speed during shuttle viewing, press the PAUSE button.**



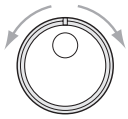

**Step 2 Release the shuttle ring.**

- The playback speed is maintained.
- When you press the PAUSE button again, the shuttle hold is canceled and the recorder resumes still image playback.

## ♦ High-speed forward/rewind playback

You can play back recorded images at a higher playback speed than that of shuttle viewing or direct shuttle viewing.

**Step 1 Turn the shuttle ring until it stops while the recorder is stopped.**



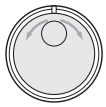
- Turn the shuttle ring clockwise until it stops: The recorder continues high-speed forward playback.
- Turn the shuttle ring counterclockwise until it stops: The recorder continues high-speed rewind playback.
- Press the STOP button: The recorder stops playback.

**Notice**

- When you change the playback speed while playing back images recorded at a low recording rate, the displayed images may be disturbed.

## ♦ Frame-by-frame playback

**Step 1 Turn the jog dial during still image playback.**



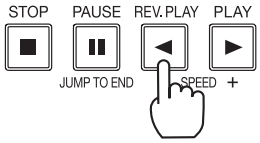
- Turn the jog dial clockwise: Forward frame-by-frame playback starts.
- Turn the jog dial counterclockwise: Reverse frame-by-frame playback starts.
- Keep turning the jog dial clockwise: Continuous forward frame-by-frame playback starts.
- Keep turning the jog dial counterclockwise: Continuous reverse frame-by-frame playback starts.
- Stop turning the jog dial: The recorder resumes still image playback.

**Notice**

- During frame-by-frame playback in the single screen display mode, the recorder feeds frames while searching images from the selected camera. Therefore, when you turn the jog dial fast, the recorder may not be able to feed frames accordingly.
- Noise may appear in the images during playback using the jog/shuttle.
- When the frame-by-frame playback is performed in the split screen mode, images may not be refreshed for a while.

## ♦ Reverse playback

**Step 1 Press the REV.PLAY button while the recorder is stopped.**




- The recorder starts reverse playback.
- When you press the STOP button, the recorder stops.

Tips

- When you perform reverse playback for the first time after turning on the power, the recorder starts reverse playback from the latest recorded image.
- Only I pictures are played.

## ♦ Changing the playback rate

Though the recorder plays or reverse-plays images at the playback rate same as the recording rate, you can change the playback rate during playback. This is convenient when you want to continuously slow-play recorded images having rapid motions and to fast-play images that were recorded at a low recording rate without skipping any frames.

This function is available only during playback in the single screen mode.

**Step 1-1 (To fast-play images that were recorded at a low recording rate)**

**Press the + button during playback or reverse playback in the single screen mode.**

- All the recorded images are played or reverse-played at the highest rate.

**Step 1-2 (To decrease the playback speed)**

**Press the - button.**

- Each time you press the – button, the playback speed decreases.

**Step 2-1 (To play back recorded images having rapid motion at a low playback speed)**

**Press the - button during playback or reverse playback in the single screen mode.**

- Images are played or reverse-played at the lowest rate.

**Step 2-2 (To increase the playback speed)**

**Press the + button.**

- Each time you press the + button, the playback speed increases. (For images recorded at a high FPS rate, the playback speed may decrease when you press the + button.)

Notice

- When you change the playback rate, audio is not played back.

  Once you change the playback rate, audio is not played back even when you reset the rate to the original value. To play back audio, stop playback and then start it again.
- When you increase the playback rate to fast-play back images recorded at a low recording rate, the actual recording time may be different from the recording time displayed on the screen.

## ♦ Playing back the latest recorded image

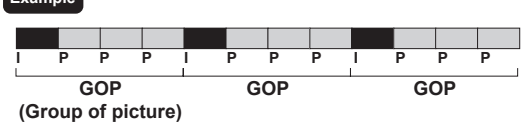
**Step 1 Press the PAUSE (JUMP TO END) button while the recorder is stopped.**

- Near the end of the latest recorded data, the recorder displays images in the 16-split still image playback mode. The time interval between the latest recorded data and the actually displayed image varies depending on the recording rate.

### Caution in various playback functions

- In reverse playback or special playback, only I pictures (intra-coded pictures) are played. However, in frame-by-frame playback using the JOG dial, P pictures (predictive-coded pictures) are also played.

Example




**(Group of picture)**

I: Intra-coded picture, P: Predictive-coded picture
When there is no I pictures in the data, the GOP cannot be displayed.

- The intended playback speed may not be obtained when a heavy load is imposed on the recorder or when the high-speed data transmission is unavailable due to the use of a DVD/CD, USB memory, or external HDD.

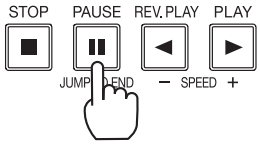
# Searching for bookmarked images

## Registering a bookmark

**Step 1 Play back the image stored in the main device to be bookmarked in the single screen display mode.**

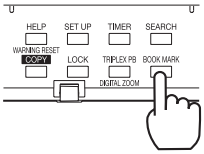
- You can register bookmarks for the main device (normal recording area, alarm recording area, and emergency recording area) only. When the main device is partitioned, you can register up to 8 bookmarks for each of the normal recording area, alarm recording area, and emergency recording area.

**Step 2 Press the PAUSE button on the front panel of the recorder.**




- A still image is played back in the single screen display mode.

**Step 3 Press the BOOK MARK button on the front panel of the recorder.**




- The <Bookmark menu> for the currently selected playback device is displayed.
- You can display this menu also from the mouse operation menu. (☞ Pages 32 and 33)

**Notice**

- When the playback device is set as copy device, archive device, or preliminary area, you cannot display the bookmark menu. (☞ Page 79)
- When you display the bookmark menu except during still image playback in the single screen display mode, you can perform search only and you cannot register bookmarks.

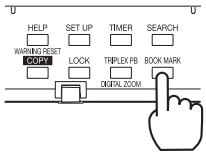
**Step 4 Select [Register] of the bookmark number you want to use in the <Bookmark menu>.**

**Tips**

- You can register multiple bookmarks for the same image.
- You can overwrite already registered bookmarks with the different scenes, but cannot delete them.
- When the bookmarked data are overwritten, their images are deleted but their information remains in the bookmark list.

## Searching for bookmarked images

**Step 1 Press the BOOK MARK button on the front panel of the recorder.**

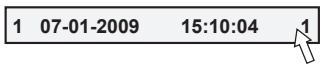



- The <Bookmark menu> for the currently selected playback device is displayed.
- You can display this menu also from the mouse operation menu. (☞ Pages 32 and 33)

**Notice**

- When the playback device is set as ccopy device, archive device, or preliminary area, you cannot display the bookmark menu. (☞ Page 79)
- You cannot switch the split screen while the <Bookmark menu> is displayed.

**Step 2 Select the date of the bookmark you want to view.**




- The image of the selected bookmark is displayed in the still image display mode.

# Copying recorded data

To copy data, use any of three methods as follows.

### ■ One-touch copy

The still image being displayed is copied. In addition, you can copy moving images recorded in the designated period of time starting from the still image being displayed.

### ■ Copying data by specifying the copy range

You can copy data based on the specified copy conditions such as start and end times and data size.

There are 3 methods for specifying the copy conditions as follows:

- Specifying the start time and data size
- Specifying the end time and data size
- Specifying the start and end times

### ■ Archive

You can make backup of data.

**Notice**

- Before copying/archiving data, check that the devices are correctly connected (☞ page 24) and are correctly registered (☞ pages 36 to 39).

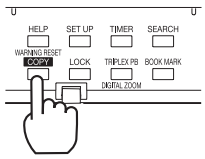
## One-touch copy

You can copy the displayed still images to a USB memory device or DVD/CD disc as still or moving images. This function is convenient when you want to copy small sections of data.

**Step 1 Set a USB memory device or a DVD/CD disc in the recorder.**

- The recorder automatically detects the copy destination device. When both a USB memory device and DVD/CD disc are detected, the DVD/CD disc is used as the copy destination device.

**Step 2 Display the image you want to copy in the single-screen still image playback mode, and then press the COPY button on the front panel of the recorder.**




- <Copy menu> is displayed.
- You can display this menu also from the mouse operation menu. (☞ Pages 32 and 33)

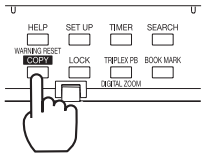
**Step 3 Select the image you want to copy.**

**[Moving image]:** The recorder copies data recorded in the designated period of time starting from the image being displayed.

**[Still image]:** The recorder copies 1 GOP including the still image being displayed.

**Step 4 When you select [Moving image] in step 3, designate the period of time of data to be copied.**

**Step 5 Select [Execute copy] or press the COPY button on the front panel of the recorder.**




- The recorder starts copying.
- When the copy destination DVD/CD disc or USB memory device becomes full during copying, the recorder stops copying.

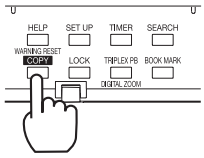
**Notice**

- You cannot use one-touch copy during copying.

## Copying data by specifying the copy range

### ♦ Setting the copy conditions

**Step 1 Press the COPY button on the front panel of the recorder.**




- <Copy menu> is displayed.
- You can display this menu also from the mouse operation menu. (☞ Pages 32 and 33)

**Step 2 Select [Setting] next to [Other copy].**

- The screen for selecting the copy range is displayed.

**Step 3 Select [Setting] next to the desired copy range selection method.**

- The screen for setting the conditions is displayed.

**Step 4 Set the copy conditions.**

**[Copy from]:** Select the copy source device that contains the data you want to copy, from among [HDD (Normal)], [HDD (Alarm)], [HDD (Emergency)], and [HDD (Archive)].

**[Copy to]:** Select the copy destination device to which data are copied, from among [DVD/CD], [USB memory], and [HDD (Copy)].

**[Camera and audio filter]:** Select the cameras and audio you want to copy. When there are no images or audio that were recorded from the selected cameras or recorded during the designated period of time, the recorder does not copy anything. Check that there is an image that was recorded from the selected cameras at the designated copy start time. Select at least one camera when you copy audio.

**[Copied data]:** Select data to be copied, from [Alarm] and [All]. When you want to copy only alarm-recorded data, select [Alarm].

**[Auto eject]:** Upon completion of copying to a DVD/CD disc, the disc tray is automatically opened. You can select this option only when the copy destination device is [DVD/CD].

**Notice**

- Only the areas created by the partition setting (☞ page 41) are displayed under [Copy from].
- When you execute copy with [Copied data] set to [Alarm], unless there are alarm-recorded data within the copy range, the recorder does not copy data actually though the copy process appears to be in progress. In the case of copying to a CD/DVD disc, the remaining capacity of the disc decreases because the management information is recorded. You are recommended to perform [Test] when you are not sure about the existence of alarm-recorded data.

## ♦ Copying data by specifying the start time and data size

**Step 1 Set the copy conditions according to steps 1 to 4 of "Setting the copy conditions" on ☞ pages 80 and 81.**

- Select [Set the start point and capacity] in step 3 and specify the conditions.

**Step 2 After making settings, select [Next] on the screen.**

- The screen for setting the copy range is displayed.

**Step 3 Designate the copy start time and data size and select [Next].**

- Designate the start time by entering the date and time or using bookmarks. When the copy source device is set to [HDD (Archive)], you cannot designate the time using bookmarks.
- You can select the unit of data size from MB and GB. The available range of data size is from 2 MB to 100 GB. When you select [Media Full], data are copied until the free space on the disc runs out. (For copy to DVD/CD only).
- To copy data starting from the oldest recorded data, click [Execute] next to [Read start time].

**Step 4 Check the copy conditions and copy range on the <Check the settings> screen.**

- When you select [Test], the recorder calculates the copy end time.

**Step 5 Select [Execute copy].**

- The recorder starts copying.
- To stop copying manually, select [Cancel] on the copy process screen. The data copied before you stop remain in the copy destination device.
- When you specify the capacity and the copy destination DVD/CD disc becomes full during copying, you can continue copying by replacing discs. When the copy destination USB memory device becomes full during copying, the recorder stops copying.

## ♦ Copying data by specifying the end time and data size

**Step 1 Set the copy conditions according to steps 1 to 4 of "Setting the copy conditions" on ☞ pages 80 and 81.**

- Select [Set the end point and capacity] in step 3 and specify the conditions.

**Step 2 After making settings, select [Next] on the screen.**

- The screen for setting the copy range is displayed.

**Step 3 Designate the copy end time and data size and select [Next].**

- Designate the end time by entering the date and time or using bookmarks. When the copy source device is set to [HDD (Archive)], you cannot designate the time using bookmarks.
- When the copy destination is HDD, designate the data size in GB.

  When the copy destination is DVD/CD or USB memory, the data until the designated end point are copied according to the remaining capacity of the copy destination device.
- To copy data to the latest recorded image, click [Execute] next to [Read end time].

**Step 4 Check the copy conditions and copy range on the <Check the settings> screen.**

- When you select [Test], the recorder calculates the copy start time. Unless you execute the test, the recorder does not start copying.

**Step 5 Select [Execute copy].**

- The recorder starts copying.
- To stop copying manually, select [Cancel] on the copy process screen. The data copied before you stop remain in the copy destination device.
- When the copy destination DVD/CD disc or USB memory device becomes full during copying, the recorder stops copying.

## ♦ Copying data by specifying the start time and end time

**Step 1 Set the copy conditions according to steps 1 to 4 of "Setting the copy conditions" on ☞ pages 80 and 81.**

- Select [Set the start and end points] in step 3 and specify the conditions.

**Step 2 After making settings, select [Next] on the screen.**

- The screen for setting the copy range is displayed.

**Step 3 Designate the copy start time and end time and select [Next].**

- Designate the start time and end time by entering the date and time or using bookmarks. When the copy source device is set to [HDD (Archive)], you cannot designate the time using bookmarks.
- To copy data starting from the oldest recorded image, execute [Read start time]. To copy data to the latest recorded image, execute [Read end time].

**Step 4 Check the copy conditions and copy range on the <Check the settings> screen.**

- When you select [Test], the recorder calculates the size of the data to be copied.

**Step 5 Select [Execute copy].**

- The recorder starts copying.
- To stop copying manually, select [Cancel] on the copy process screen. The data copied before you stop remain in the copy destination device.
- When the copy destination DVD/CD disc becomes full during copying, you can continue copying by replacing discs. When the copy destination USB memory device becomes full during copying, the recorder stops copying.

### Caution in copying data

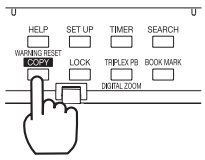
- When the size of the data to be copied is larger than the remaining capacity of the copy destination device such as USB memory device and HDD, the estimated size of the data to be copied indicates the remaining capacity of the copy destination device. You are recommended to check that all data in the designated range were copied after the completion of copying.
- With a personal computer containing the special PC viewing/communication software, you can play back data copied to a DVD/CD disc or USB memory device.

  When you copy a still image, double-click the file on a personal computer containing the special PC viewing/communication software.

  When you copy moving images, use the DX-Viewer to select the folder and start playback.
- You are recommended to avoid adding data to media already containing important records. If data are not added properly, the already existing data may not be read out anymore.
- When you copy the picture from multiple cameras, copy start time may be delayed from the designated time depending on the camera (especially for the camera recorded at low FPS rate).
- In the case that [Calculation failed] appears after you execute the test, check whether the disc is inserted, whether the disc format is compatible with the recorder, and whether the DVD/CD drive is recognized properly.
- When you close the copy process screen and then display it again, [Preparing for copy] may be displayed for a while.
- Even when [Media Full] is selected, the remaining capacity of the copy destination device may not decrease to 0.
- When you copy or search the data recorded on a DVD/CD or USB memory, it may take some time before the media is completely recognized after inserted. Before you perform copy or search, check whether the access lamp of the DVD/CD drive or USB memory blinks.
- When you perform copy without executing the test, the copy status indication does not progress in sync with the amount of actually copied data.
- When the USB memory device is write-protected, disable the protection before use.
- Since the data are copied in 64 MB units, you cannot use the device with the remaining capacity of less than 64 MB as the copy device.
- With this recorder, up to 4 GB USB memory devices are usable. USB devices with 128 MB or less capacity are not supported.

## Archiving data

**Step 1 Press the COPY button on the front panel of the recorder.**




- <Copy menu> is displayed.
- You can display this menu also from the mouse operation menu. (☞ Pages 32 and 33)

**Step 2 Select [Setting] next to [Archive].**

- The <Archive> screen is displayed.

**Step 3 Check the archive conditions displayed on the screen. To change the conditions, select [Setting].**

- The screen for setting the conditions is displayed.
- When you carry out archiving without changing the settings, it is started from the last stopped position.

**Step 4 When you select [Setting] in step 3, set the archive conditions.**

**[Archive from]:** Select the archive source device that contains the data you want to archive, from among [HDD (Normal)], [HDD (Alarm)], and [HDD (Emergency)].

**[Start]:** Designate the archive start time. To archive data starting from the beginning of the recorded data, select [Read start time]. To archive data from the end of the last archiving, select [Read previous end point].

**[Camera and audio filter]:** Select the cameras and audio you want to archive. When there are no images or audio that were recorded from the selected cameras or recorded during the designated period of time, the recorder does not archive anything. Check that there is an image that was recorded from the selected cameras at the designated archive start time. Select at least one camera when you archive audio.

**[FIFO overwrite]:** With this option enabled, when the available space of the archive destination device runs out, the recorder automatically continues recording by overwriting the data in the device from the beginning.

**Notice**

- Only the areas created by the partition setting (☞ page 41) are displayed under [Archive from].

**Step 5 After making settings, select [Return].**

- The <Archive> screen is displayed.
- When you change the archive conditions, check that the conditions are displayed properly on the <Archive> screen before starting archive.

**Step 6 Select [Execute archive].**

- The recorder starts archiving.
- To stop archiving manually, select [Stop archive]. The data archived before you stop remain in the archive destination device.

## Copying data from the recorder to videotape

You can copy data to a videotape using an analog video cassette recorder (VCR). You can copy data even while this recorder is in recording operation. For the recording procedure, see the instruction manual for the analog VCR you use.

**Step 1 [Analog VCR] - Prepare for recording.**

- Be sure to select the VCR's external input connected to the recorder as the input source.

**Step 2 [This recorder] - Select the screen mode (single or split) for recording.**

**Step 3 [This recorder] - Search for the image you want to start copying using the search function.**

**Step 4 [Analog VCR] - Start recording.**

**Step 5 [This recorder] - Press the PLAY button to start playback.**

**Step 6 To stop copying, press the REC/STOP button on this recorder to stop playback. Then, stop the VCR to stop recording.**

**Notice**

- For connection between this recorder and the analog VCR, see ☞ page 27.
- Only images displayed on the screen are copied to the videotape.

## Communication functions of this recorder

You can use the following communication functions of this recorder using the LAN port on the rear panel via TCP/IP.

- Communication by Web browser
- E-mail notification
- FTP notification
- Communication by the special PC viewing/ communication software

### ♦ Restrictions on network users

- Up to 5 network users can login simultaneously.

  This means that up to 5 users can share the access to the Web browser and the special PC viewing/ communication software at the same time.

  Only 1 user of them is allowed to configure and control the recorder. Only 2 users of them are allowed to search and play back recorded data.

  All users are allowed to load live images.
- You cannot register more than one same user ID. Up to 16 alphanumeric characters (case sensitive) can be used for user ID and password. You cannot use spaces.
- In communication using the special PC viewing/ communication software, you can use a function called "Interrupt right." When a user having this right logs in, ongoing communication by the other users are shut down.

### ♦ Bandwidth control

- When you use the recorder in a narrow band environment other than LAN, the image transmission is automatically adjusted, however, it may take time to display the image. To improve such symptom, set the recorder's communication bandwidth according to the band to be used in advance. To set the bandwidth, use the special PC viewing/communication software or the Web browser. When you narrow the bandwidth, the recorder may not be able to perform communication in some cases.

### ♦ Cautions in communicating by the Web browser or PC viewing/communication software

- The picture size of recorded images obtained from the recorder varies depending on the operation load being applied to the recorder. In addition, you may not be able to obtain images from desired cameras in some cases.

  When the target camera is changed due to request for live images by other network users or other events, the image refreshing may be interrupted for a moment because the recorder controls image distribution.

### ♦ Cautions regarding the same setting items displayed on multiple screens

- As for the same setting items displayed on multiple screens (for example, DNS server setting, retry interval, etc.), when you configure such item on one screen, those on the other screens are configured to the same value accordingly.

## Communication by Web browser

You can load live images and recorded images captured by the cameras connected to the recorder using the Web browser installed in your personal computer (hereinafter "PC"). Using the Web browser, you can also configure certain settings of the recorder.

**Notice**

- Microsoft® and Windows® are registered trademarks of Microsoft Corporation in the U.S. and other countries. (The official name of Windows is Microsoft Windows Operating System.) All other company and product names appearing herein are trademarks or registered trademarks of their respective owners. The symbol "®" is omitted from the text in this manual.
  - Windows 2000 is an abbreviation of Microsoft Windows 2000 Professional.
  - Windows XP is an abbreviation of Microsoft Windows XP Home Edition/Professional.

### ♦ PC system requirements

OS ..... Microsoft Windows 2000 or Windows XP.

CPU ... Pentium 4 series, Celeron series, or their successor series supporting Intel SSE2 extended instruction set (Intel compatible CPU is not supported.)

RAM... 512 MB or more.

HDD... System drive with free space of at least 200 MB.

Web browser software ... Microsoft Internet Explorer 5.5 to 6.

Display device ..... XGA (1024 pixels x 768 pixels) or higher.

Monitor resolution ..... 96 dpi

**Notice**

- Operation is not always guaranteed in any environment that satisfies the above-mentioned system requirements.
- Lack of compatibility between the Web functions and the PC peripheral drivers may, in rare instances, result in abnormal operation.
- To load images from this recorder using the Web browser, install the ActiveX control in your PC.

## ♦ Connections

- To connect a PC to this recorder directly, use a cross cable. To connect them via a hub, use a straight cable.
- For the procedure for making Web settings of the PC, refer to the PC's instruction manual.
- The service port for Web communication is set to "00080" by default.

## ♦ Login

Start Microsoft Internet Explorer and log in.

**Step 1 Start Microsoft Internet Explorer and enter the IP address of the recorder in the address box.**

- Enter the IP address set on the <LAN settings> screen (☞ page 114). The default IP address is "192.168.0.100."
- The [Login] screen appears.

**Step 2 Enter the user ID and password.**

- A full-rights user (user ID: "root" password: "admin000") and a live user (user ID: "guest" password: "guest") have been registered as factory-preset users.

**Notice**

- More than one user can log in simultaneously using the same user ID and password.
- Available functions vary depending on the user's authorization.
- Depending on the settings of recording, copying, motion detection, etc., a heavy load is imposed on the recorder's internal processing. Due to this, the recorder may not be able to communicate with the PC smoothly or its operation may become slow. In this case, reduce the load on the recorder.

**Step 3 Select [login].**

- The [Main Menu] screen appears.

**Notice**

- If you enter a wrong user ID or password, an [Caution] screen appears. In this case, select [Login] to go back to the [Login] screen and then enter the correct user ID and password.
- If you do not log in, log out using the following procedure.
  1 Select "If you won't log in, please go to Logout."
  - A message saying "Session ID removed from recorder & browser. Please close the browser." is displayed.

  2 Exit the Web browser.

### Notes on the Main Menu

Using the Main Menu, you can perform the following operations.

- [Live Monitoring]: You can load and display live images.
- [Playback]: You can load and play back recorded images.
- [Configuration Menu]: You can configure certain recorder settings.

**Notice**

- Depending on the user's authorization, some menus are not selectable.
- User session ID (connection information) is lost in 10 minutes after the last communication including loading images. If request for data is not made from a client PC for 10 minutes, you cannot perform further operations. In this case, exit the Web browser and log in again.
- When the MAIN switch of the recorder is set to OFF, you cannot load live images and recorded images.

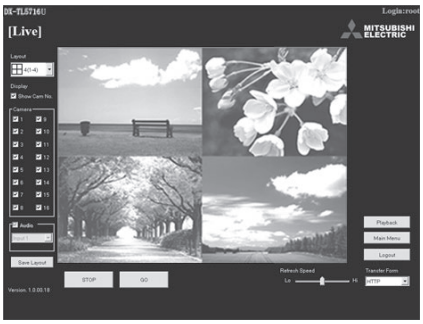
## ♦ Viewing live images

You can load live images and display them on the PC monitor.

**Step 1 Display the [Main Menu] screen according to steps 1 to 3 of "Login" on ☞ page 86.**

**Step 2 Select [Live Monitoring].**

- The [Live] screen appears.




**Layout**.....You can select the display pattern.

**Display**.....You can select whether or not to display the camera numbers.

**Camera** .....You can select cameras to display images.

**Audio** .....You can select audio to be output.

**Save Layout** .....You can save the screen layout pattern in the PC.

In addition to the layout pattern, following information is also saved.

- Setting for displaying camera numbers
- Audio output ch
- Image refresh rate
- Image transfer system

**STOP**.....You can stop loading images.

**GO**.....You can start (resume) loading images.

**Refresh Speed** .....You can select the image loading speed from 5 levels from [Lo] (low) to [Hi] (high). (Default: Middle)

**Transfer Form** .....You can select the image transfer system. When selecting [HTTP], you can load images even when firewalls are provided. When selecting [RTP], you can load images at a high speed. In this case, however, a setting of router or similar device may be required. RTP receiving port is 45001.

**Playback**.....The [Playback] screen appears.

**Main Menu**.....The [Main Menu] screen appears.

**Logout** .....You can log out.

**Notice**

- When the total recording FPS is larger than the following values, images from cameras not recorded are not refreshed.

  When the picture size is set to [4CIF].....90 FPS
  When the picture size is set to [2CIF].....180 FPS
  When the picture size is set to [CIF].....360 FPS
- When you set [Refresh Speed] to [Hi] (high), the PC may not operate correctly depending on its performance specifications. Adjust the image refresh rate for proper operation of the PC.
- Depending on the network capacity or the operation load, the refresh rate may not be increased.
- The transfer rate during communication varies depending on the communication environment and the operation load on the recorder.
- When the image transfer form is [RTP], you cannot adjust the refresh speed.
- When the image transfer form is [HTTP], audio is not output.
- Installing ActiveX is required to view live images or to play recorded images. To install, copy DXV60.exe contained in the supplied CD to the PC and double-click on it. After completing the installation of ActiveX, delete the copied DXV60.exe from the PC.
- When you view live images while the recorder is in recording at high picture quality or when you play back images recorded at high picture quality, if images change in a large amount between frames, the recorder may not be able to send all the images to the PC because of an excessive amount of data. To view or play such data on the PC, load the data first by copying them to the media or by the section download function via communication.
- Live/Playback images may not be displayed depending on the operation environment of the PC (in the case of a non-SSE-supporting PC).
- On the PC, you may not be able to view all the images sent from the recorder.

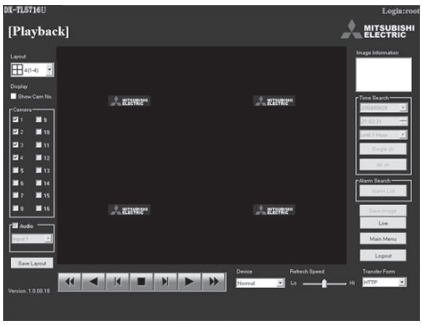
## ♦ Playing back recorded images

You can load and play back images recorded by the recorder.

**Step 1 Display the [Main Menu] screen according to steps 1 to 3 of "Login" on ☞ page 86.**

**Step 2 Select [Playback].**

- The [Playback] screen appears.




⏪ ..... Press to start high-speed reverse playback at x2, x4, x8 and x16.

◀ ..... Press to start reverse playback.

⏮ ..... Press to start reverse frame-by-frame playback.

■ ..... When you press this button during playback or search, the image is displayed in the still image playback mode.

⏭ ..... Press to start forward frame-by-frame playback.

▶ ..... Press to start playback.

⏩ ..... Press to start high-speed forward playback at x2, x4, x8 and x16.

**Device** ..... You can select a partition for playback and search. (Default: Normal)

**Live** ..... The [Live] screen appears.

**Image Information** .. The date, time, and camera number of the loaded image are displayed.

**Save Image** ..... You can save the displayed still image in the PC as a bitmap file.

## ♦ Searching recorded images

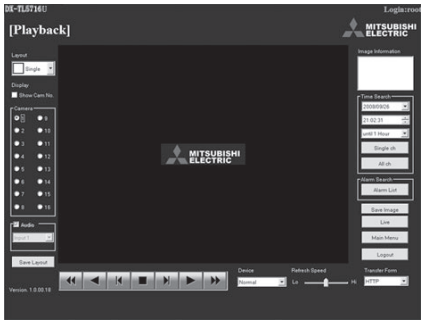
You can load images recorded by the recorder and search for images you want to view.

**Notice**

- To search recorded images using the search functions or to save images, select the single screen display mode on the [Playback] screen and stop playback. These functions do not operate during playback, so stop playback first.
- When you search images in RTP, you may not be able to obtain the search result if the network loss is high. In such a case, carry out the search again or ensure stable communication by viewing live images or playing recorded images for a while.

### Searching for images by designating date and time

**Step 1 Stop playback in the single screen display mode on the [Playback] screen.**




**Step 2 Under [Time Search], designate the date and time or period of time to search.**

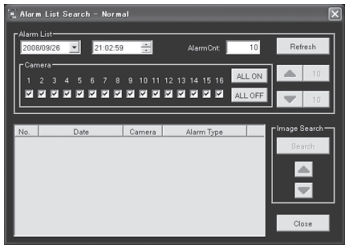
**Step 3 Select [Single ch] to search the image of the camera which is being displayed. Select [All ch] to search the image of all the cameras.**

### Searching for images using the alarm list

**Step 1 Stop playback in the single screen display mode on the [Playback] screen.**

**Step 2 Select [Alarm List].**

- The [Alarm List Search] screen appears in the sub-screen.




**Step 3 Designate the date and time and the number of alarm events you want to retrieve, and then select [Refresh].**

- Unless you click [Refresh], you cannot display the alarm list.
- Enter the number of alarm events you want to retrieve in the [Alarm Cnt] box. When you enter a large value in the [Alarm Cnt] box, depending on the recording condition, it may take time to retrieve alarm events or the designated number of alarm events may not be retrieved.
- [Camera]: Put a checkmark for the cameras of which alarm events you want to include in the alarm list.
- Click [▲ (number)] to search in the reverse direction and click [▼ (number)] to search in the forward direction.

**Step 4 Select the number of the alarm event you want to retrieve and select [Search].**

- When you click ▲ in the [Image Search] area, the image of the next alarm event is displayed.

  When you click ▼, the image of the previous alarm event is displayed.
- When you click [Refresh] again, the alarm list is updated. Click [Close] to hide the [Alarm List Search] screen.

## ♦ Setting the Main Menu

**Notice**

- The numbers in parentheses ( ) of the setting items on the screen shows the maximum number of characters you can enter.

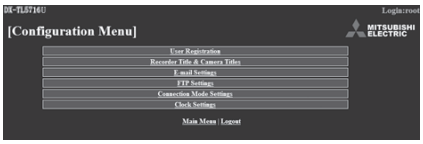
### Changing user settings

You can change the settings related to the authorization of the registered users and remove registered users. You can also register new users.

**Step 1 Display the [Main Menu] screen according to steps 1 to 3 of "Login" on ☞ page 86.**

**Step 2 Select [Configuration Menu].**

- The [Configuration Menu] screen appears.




**Step 3 Select [User Registration].**

- The [User Registration] screen appears.

**■ Changing the settings of the registered users**

**Step 1 Change the settings using [Change authorities of users] on the [User Registration] screen.**

**[Authority]**

**Live Monitoring**.....The user is allowed to load live images. This is the essential authority for each user.

**Playback**.....The user is allowed to load recorded images.

**All Cameras**.....The user is allowed to load images from all cameras. (This authority allows the user to load images from the cameras that are disabled by the covert camera setting (☞ page 111)).

**Configuration**.....The user is allowed to view or change user registration information and configure certain settings of the recorder.

**Step 2 Select [change].**

- The [Change Confirmation] screen appears.

**Step 3 To change the settings, select [change].**

- To cancel, select [cancel]. The [User Registration] screen is displayed.

**Step 4 Select [User Registration] on the [Completed] screen.**

- The [User Registration] screen is displayed.

**■ Removing registered users**

**Step 1 Select [remove] of the user ID that you want to remove using [Change authorities of users] on the [User Registration] screen.**

- The [Remove Confirmation] screen appears.

**Step 2 To remove the user, select [remove].**

- To cancel, select [cancel]. The [User Registration] screen is displayed.

**Step 3 Select [User Registration] on the [Completed] screen.**

- The [User Registration] screen is displayed.

**■ Registering new users**

**Step 1 Enter a new user ID and password in [Add New User] on the [User Registration] screen.**

**Step 2 Select the authority of the new user.**

**Step 3 To register the user, select [register].**

- The user is added to [Change authorities of users].
- To cancel the registration, select [clear]. The settings you made are cleared.

## Setting the titles of the recorder and cameras

You can set or change the titles of the recorder and cameras.

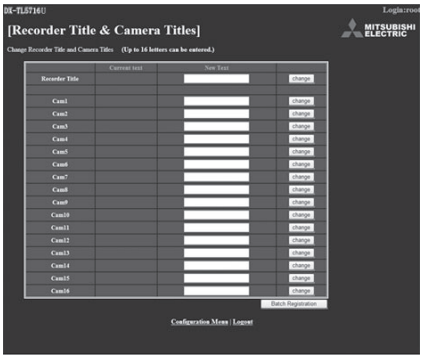
**Step 1 Display the [Main Menu] screen according to steps 1 to 3 of "Login" on ☞ page 86.**

**Step 2 Select [Configuration Menu].**

- The [Configuration Menu] screen appears.

**Step 3 Select [Recorder Title & Camera Titles].**

- The [Recorder Title & Camera Titles] screen appears.




**Step 4 Enter a new title.**

- The current recorder title and camera titles are shown in the [Current text] boxes.

**Step 5 Select [change].**

- When you select [Batch Registration], all the settings shown on the screen are determined.

## E-mail setup

For e-mail transmission, you can make settings related to the mail server, sender, and e-mail addresses of recipients.

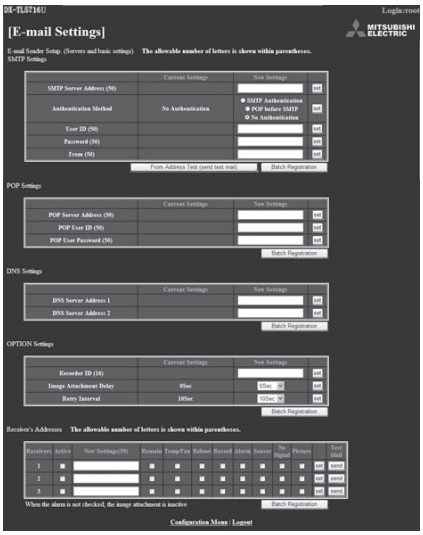
**Step 1 Display the [Main Menu] screen according to steps 1 to 3 of "Login" on ☞ page 86.**

**Step 2 Select [Configuration Menu].**

- The [Configuration Menu] screen appears.

**Step 3 Select [E-mail Settings].**

- The [E-mail Settings] screen appears.




**Step 4 Make settings for the server to send e-mail using [E-mail Sender Setup].**

- The current settings are shown in the [Current Settings] area.

### ■ SMTP Settings

- To determine the settings shown in a row, select [set] of that row. When you select [Batch Registration], all the settings shown under [SMTP Settings] are determined.

  **[SMTP Server Address]:** You can set the address of the SMTP server.

  **[Authentication Method]:** You can select the authentication method.

  **[User ID]:** You can set the ID used for SMTP AUTH.

  **[Password]:** You can set the password used for SMTP AUTH.

  **[From]:** You can set the sender address.

  **[From Address Test (send test mail)]:** You can send test e-mail.

### ■ POP Settings

- To determine the settings shown in a row, select [set] of that row. When you select [Batch Registration], all the settings shown under [POP Settings] are determined.

  **[POP Server Address]:** You can set the address of the POP server.

  **[POP User ID]:** You can set the user name of the POP server.

  **[POP User Password]:** You can set the password of the POP server.

### ■ DNS Settings

- To determine the settings shown in a row, select [set] of that row. When you select [Batch Registration], all the settings shown under [DNS Settings] are determined.

  **[DNS Server Address 1]:** You can set the primary DNS server address.

  **[DNS Server Address 2]:** You can set the secondary DNS server address.

### ■ OPTION Settings

- To determine the settings shown in a row, select [set] of that row. When you select [Batch Registration], all the settings shown under [OPTION Settings] are determined.

  **[Recorder ID]:** You can set the recorder ID.

  **[Image Attachment Delay]:** You can set the timing to capture an image to be attached by the image attachment function. You can set the interval between the occurrence of an alarm event and the image capturing to up to 10 seconds. To use the image attachment function, select [Picture] in step 5.

  **[Retry Interval]:** You can set the interval of retries performed when transmission is failed.

**Step 5 Set the recipients' addresses and e-mail contents in [Receiver's Addresses].**

- You can set up to 3 addresses.
- To determine the settings shown in a row, select [set] of that row. When you select [Batch Registration], all the settings shown under [Receiver's Addresses] are determined.

  **[Active]:** Select recipients to whom e-mail is sent.

  **[New Settings]:** Enter a new address.

  **[Remain]:** With this option selected, notification is issued when the remaining capacity decreases to the preset value (by call-out setting).

  **[Temp/Fan]:** With this option selected, notification is issued when a high temperature is detected or the fan is stopped.

  **[Reboot]:** With this option selected, notification is issued when a failure occurs in the recorder.

  **[Record]:** With this option selected, notification is issued at the start of recording.

  **[Alarm]:** With this option selected, notification is issued at the start of alarm recording.

  **[Sensor]:** With this option selected, notification is issued when a trigger signal is input to the rear terminal.

  **[No Signal]:** With this option selected, notification is issued when the sync signal of the camera selected for normal recording or alarm recording is lost for 2 seconds or longer or in an abnormal status for 2 seconds or longer. Notification is also issued when the video signal from the camera recovers.

**[Picture]:** With this option selected, e-mail notification is sent to the recipient together with an image captured at the start of alarm recording as attachment. To use this function, see "E-mail notification" on ☞ page 97.

**[Test Mail]:** When you select [send], test mail is sent to the selected recipient.

Notice

- Images detected by the same sensor may not be attached to the e-mail notification messages unless an interval of at least 5 seconds is given between transmissions of the messages. Without the interval, only the notification messages may be e-mailed. In addition, even images detected by different sensors may not be attached and only the messages may be e-mailed unless an interval of at least 3 seconds is given.
- Against failure of message transmission and undelivered messages, the e-mail function of this recorder has been designed to implement measures such as saving e-mail messages temporarily and re-sending them. However, when a heavy load is applied to the recorder because of high-quality and high-rate recording or when the communication line is busy or it has a problem, the recorder may not be able to notify of all the detected events. Consider this matter when incorporating the recorder into an alarm reporting system or other similar system.

## FTP notification setup

You can make settings for FTP notification.

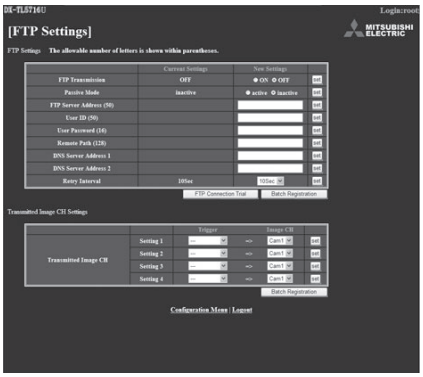
**Step 1 Display the [Main Menu] screen according to steps 1 to 3 of "Login" on ☞ page 86.**

**Step 2 Select [Configuration Menu].**

- The [Configuration Menu] screen appears.

**Step 3 Select [FTP Settings].**

- The [FTP Settings] screen appears.




**Step 4 Make settings of the server for FTP notification.**

- The current settings are shown in the [Current Settings] area.
- To determine the settings shown in a row, select [set] of that row. When you select [Batch Registration], all the settings shown under [FTP Settings] are determined.

  **[FTP Transmission]:** You can select whether or not to issue FTP notification.

  **[Passive Mode]:** You can send data in the passive mode.

  **[FTP Server Address]:** You can set the FTP server address.

  **[User ID]:** You can set the user name of the FTP server.

  **[User Password]:** You can set the password of the FTP server.

  **[Remote Path]:** You can set the remote path of the FTP server.

  **[DNS Server Address 1]:** You can set the primary DNS server address.

  **[DNS Server Address 2]:** You can set the secondary DNS server address.

  **[Retry Interval]:** You can set the interval of retries performed when transmission is failed.

  **[FTP Connection Trial]:** You can test the connection to the FTP server.

**Step 5 Set the trigger and camera number to issue FTP notification using [Transmitted Image CH Settings].**

- To determine the settings shown in a row, select [set] of that row. When you select [Batch Registration], all the settings shown under [Transmitted Image CH Settings] are determined.

  **[Trigger]:** You can select the trigger for FTP notification from among Sensors 1 to 16 and Emergency.

  **[Image CH]:** You can select the camera for FTP notification from among Cameras 1 to 16.

**Notice**

- Due to a server connection failure or other problem, events to be notified may be accumulated in the recorder. In such a case, you cannot test the FTP connection until the accumulated events are notified. When the settings related to the notification are changed during the period between the occurrence of an event and the completion of notification, the accumulated events in the recorder may be deleted without being notified.

## Connection mode setup

You can change the SSL settings.

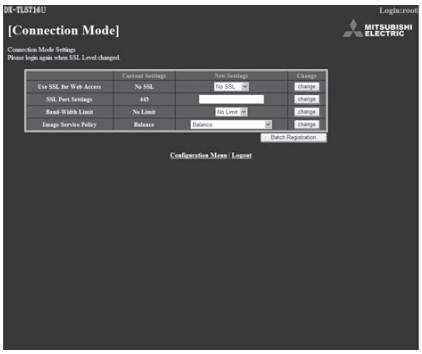
**Step 1 Display the [Main Menu] screen according to steps 1 to 3 of "Login" on ☞ page 86.**

**Step 2 Select [Configuration Menu].**

- The [Configuration Menu] screen appears.

**Step 3 Select [Connection Mode Settings].**

- The [Connection Mode] screen appears.




**Step 4 Enter a new value in [New Settings] of the item you want to change and select [change].**

- When you select [Batch Registration], all the settings shown on the screen are determined.
- **[Use SSL for Web Access]:** You can select whether or not to use Secure Socket Layer (SSL).

  [No SSL]: SSL is not used.

  [Use SSL]: SSL is used.
- **[SSL Port Settings]:** You can set the number of the port used for SSL communication.
- **[Band-Width Limit]:** You can control the communication bandwidth.
- **[Image Service Policy]:** You can select the first priority in image transmission.

  [Priority to Number of Frames]: Image refresh rate is increased.

  [Priority to Image Quality]: High quality images are transmitted.

  [Balance]: Images are transmitted, keeping the balance between the image refresh rate and the image quality.

**Notice**

- When the communication fails, set the recorder's communication band according to the communication band used.
- [Image Service Policy] becomes enable only when the operation load caused by recording is light. Use this option when the total recording rate of the recorder settings is set to three-quarters or less of the maximum value.

  For example, when the picture size is [4CIF], the maximum recording rate is 120 FPS. In this case, set each recording rate so that the total rate is 90 FPS or less.
- When you select [Use SSL], connection is shut down. Make a connection after a few minutes. When SSL is enabled, the following message appears. Select [Yes] and continue the setting.

Security Alert
Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.
The security certificate was issued by a company you have not chosen to trust. View the certificate to determine whether you want to trust the certifying authority.
The security certificate has expired or is not yet valid.
The name on the security certificate is invalid or does not match the name of the site
Do you want to proceed?
Yes
No
View Certificate

## Clock setup

You can set the clock of the recorder via the PC.

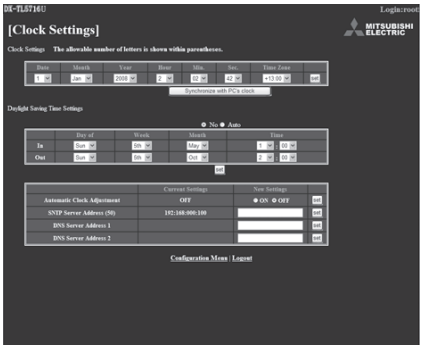
**Step 1 Display the [Main Menu] screen according to steps 1 to 3 of "Login" on ☞ page 86.**

**Step 2 Select [Configuration Menu].**

- The [Configuration Menu] screen appears.

**Step 3 Select [Clock Settings].**

- The [Clock Settings] screen appears.




### ■ Adjusting the recorder's clock automatically using the SNTP server

**Step 1 Select [ON] of [Automatic Clock Adjustment] on the [Clock Settings] screen and then select [set].**

**Step 2 Enter the address of the SNTP server in [SNTP Server Address] and select [set].**

**Step 3 Enter the address of the primary DNS server in [DNS Server Address 1] and that of the secondary DNS server in [DNS Server Address 2], and then select [set].**

**Notice**

- The SNTP server connection function of the recorder does not support all types of SNTP server.
- The SNTP time adjustment starts working about 10 minutes after being enabled and then it corrects the time every about 10 minutes.

### ■ Adjusting the recorder's clock manually

**Step 1 Enter the current month, day, year, hour, minute, and second under [Clock Settings].**

**Step 2 Select [set].**

- When you adjust the clock at the time when the date or time changes, check the clock again after completing the setting.

### ■ Setting the day light saving

**Step 1 Set the day light saving setting.**

**[No]:** Auto day light saving function is not used.

**[Auto]:** Automatically adjusts the clock according to the settings. For the detailed settings, use the [In] area to set the time and date for advancing the clock and [Out] area for putting back the clock. Select [set] to determine the settings.

### ■ Synchronizing the recorder's clock with the PC's clock

**Step 1 Select [Synchronize with PC's clock] on the [Clock Settings] screen.**

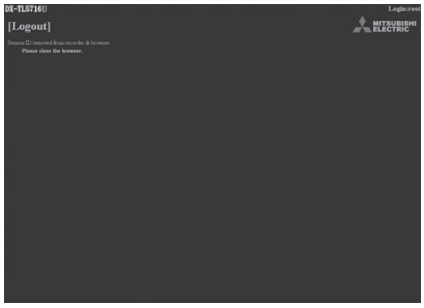
- The recorder's clock is synchronized with the PC's clock.
- When you adjust the clock at the time when the date or time changes, check the clock again after completing the setting.

## ♦ Logout

This screen is displayed when you log out successfully.

**Step 1 Select [Logout].**

- The [Logout] screen appears.




**Step 2 Exit the Web browser.**

**Notice**

- If you exit the browser without taking the proper log-out procedure, your user session ID remains effective for 10 minutes. If a user logs in using the same user ID within the 10 minutes, the user's operations may be restricted.

## E-mail notification

This recorder issues e-mail notification of operation errors and recording status. You can combine notified events such as operation errors and recording status, and notification can be sent to up to 3 e-mail addresses. Use the Web browser or the special PC viewing/communication software to enable this function. Authentication for e-mail transmission supports POPbeforeSMTP and SMTP_AUTH (CRAM_MD5).

**Notice**

- Do not select events that frequently occur as e-mail notified events. Events that frequently occur may not be always notified.
- The e-mail transmission function of this recorder does not support all e-mail servers.
- Image attached to e-mail is in general JPEG format.
- When the recording rate is extremely high, image cannot be attached to e-mail due to restrictions on the compression circuit. To attach an image to e-mail, the total recording rate of the recording settings should be set to three-quarters or less of the maximum value.
- One of alarm-recorded images or emergency-recorded images of the camera corresponding to the terminal (ALARM IN or EMERGENCY) that receives a trigger signal is attached to e-mail.
- To attach an image, select [Alarm].
- When multiple events to be notified occur at the same time, notification may be delayed or some of the events may not be notified.
- When multiple alarm signals are received at the same time, only the image from the camera corresponding to the sensor having the smallest sensor number is attached to e-mail.
- Loading of live images may be interrupted for a moment while notification with an image attached is being issued.
- Image is attached to e-mail at least 3 seconds after the issuance of the previous notification with an image attached.
- When notification to be issued with images occur quite frequently or when it takes time to transmit data to the e-mail server, the maximum number of e-mail text to be saved is 100 and that of attached images is 32.

## FTP notification

This recorder can upload images to the FTP server when a signal is input to the rear terminals. A date folder and a time folder are automatically created on the FTP server and data are uploaded to those folders. Use the Web browser or the special PC viewing/communication software to enable this function. You can play back the data uploaded to the FTP server using the special viewing/communication software DX-Viewer. To play back the data, save the downloaded CBL000.dat file in the ARE00000 folder.

**Notice**

- The image data uploaded upon FTP notification is slightly delayed from the actual start point of alarm recording.
- The size of image data uploaded per notification is 2 MB.
- Do not connect such a device as receives input signals frequently to the rear terminals that receives trigger for FTP notification. During issuance of notification, another notification is not issued even when a trigger signal is input. When FTP notification is issued frequently, operations of the communication functions may be impaired.
- E-mail notification is triggered only by the ALARM IN terminal and EMERGENCY terminal on the rear panel. To issue the notification, set the desired camera for alarm recording or emergency recording. (For setting, see pages ☞ 54 to 61.)
- The recorder cannot notify multiple events at the same time. The recorder doesn't notify another event that is input during issuance of notification (during uploading data).
- The file structure of data uploaded to the FTP server is as follows.

  To distinguish recorders, you are recommended to make folders with a name including respective recorders' name on the FTP server in advance and to set so that the following folders are saved in them.

  Folder "YYYYMMDD"
  |
  Folder "hhmmss-Ch"
  |
  File "CBL000.dat"
- The FTP server connection function of the recorder does not support all types of FTP server.

## Communication by the viewing/ communication software

You can use the following functions using the special PC viewing/communication software.

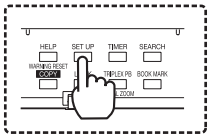
- Loading live images and audio
- Searching recorded images
- Section download
- Recorder control
- Recorder setting
- Receiving IP notification
- Playing back recorded images and audio

Refer to the instruction manual of the special PC viewing/ communication software for the details of the functions and their usage. The instruction manual is added to the Start menu when the software is installed.

You can make basic settings using the <Setup> menu.

## ♦ How to display the Setup menu

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [Setup].**

- The <Setup> menu is displayed.

## ♦ Quick reference chart for the Setup menu

### How to use the quick reference chart for the Setup menu

The tables on ☞ pages 99 to 104 show the lists of items in the Setup menu, which are for keeping records of your settings. Please use them when you make settings.

**How to use the quick reference chart for the Setup menu**

Example: Warning display · Buzzer · Call-out 1

| | | Remain | | | | | | | | | | | | Warning | | Buzzer | | Call-out | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | - | 0% | 2% | 4% | 6% | 8% | 10% | 15% | 20% | 30% | 40% | 50% | Enable | Disable | Enable | Disable | Enable | Disable |
| Remain | Normal | | | | | | | | | | | ✓ | | ✓ | | ✓ | | ✓ | |
| | Alarm | | | | | | | | | | | | ✓ | | | ✓ | | | ✓ |
| | Emergency | ✓ | | | | | | | | | | | | | | | ✓ | | ✓ |
| | Archive | ✓ | | | | | | | | | | | | | | | ✓ | | ✓ |
| Button sound | | | | | | | | | | | | | | | | ✓ | | | |
| Start alarm recording | | | | | | | | | | | | | | | | ✓ | | | |
| Communication | | | | | | | | | | | | | | | | ✓ | | | |

Items in boldface type are parameters you can actually set. See the reference pages for details.

For later review, you are recommended to mark on the items you set.

The colored values or settings are factory defaults.

**Clock and language** You can set the date and time. This menu is also used for selecting the menu language. Page 105

Language setting ☐ **ENGLISH** ☐ **FRANÇAIS** ☐ **ESPAÑOL**

**Warning display • Ext terminal setting** You can make settings of the terminals on the rear panel and warning displays. Pages 105 to 108

### ♦ Warning display • Buzzer • Call-out 1

You can set the recorder's operation performed when the remaining capacity reaches the designated value. Page 105 and 106

| | | Remain | | | | | | | | | | | Warning | | Buzzer | | Call-out | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | - | 0% | 2% | 4% | 6% | 8% | 10% | 15% | 20% | 30% | 40% | 50% | Enable | Disable | Enable | Disable | Enable | Disable |
| Remain | Normal | | | | | | | | | | | | | | | | | | |
| | Alarm | | | | | | | | | | | | | | | | | | |
| | Emergency | | | | | | | | | | | | | | | | | | |
| | Archive | | | | | | | | | | | | | | | | | | |
| Button sound | | | | | | | | | | | | | | | | | | | |
| Start alarm recording | | | | | | | | | | | | | | | | | | | |
| Communication | | | | | | | | | | | | | | | | | | | |

### ♦ Warning display • Buzzer • Call-out 2

You can set the recorder's operation performed when an error occurs. Page 106

| | Warning | | Buzzer | | Call-out | |
|---|---|---|---|---|---|---|
| | Enable | Disable | Enable | Disable | Enable | Disable |
| System reboot | | | | | | |
| No Main HDD | | | | | | |
| Error in REC mode | | | | | | |
| Error in PB/Copy mode | | | | | | |
| No camera signal | | | | | | |
| High temperature | | | | | | |
| Fan stop | | | | | | |

### ♦ Mode-out • Remaining capacity

You can make settings for the mode-out terminals and remaining capacity. Page 107

| | Trigger | | | | | | | | | | Polarity | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Off | REC | Play | Remain 1 | Remain 2 | Power on | Alarm | LAN | LAN (2s) | LAN (10s) | Close | Open |
| Mode-out 1 | | | | | | | | | | | | |
| Mode-out 2 | | | | | | | | | | | | |
| Mode-out 3 | | | | | | | | | | | | |
| Mode-out 4 | | | | | | | | | | | | |

| | HDD | | | | | Remain | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Off | Normal | Alarm | EMR | Archive | 2% | 4% | 6% | 8% | 10% | 15% | 20% | 30% | 40% | 50% |
| Remain 1 | | | | | | | | | | | | | | | |
| Remain 2 | | | | | | | | | | | | | | | |

### ♦ Event terminal

You can set the recorder's operation performed when the EVENT terminals (1 to 3) on the rear panel are grounded. Page 108

| | Off | REC (edge) | REC (level) | Rec stop | Program 1 | Program 2 | Program 3 | ADC |
|---|---|---|---|---|---|---|---|---|
| Event 1 | | | | | | | | |
| Event 2 | | | | | | | | |
| Event 3 | | | | | | | | |

**Information display setting** You can set the items to be displayed on the screen and their display position. You can also make the setting menus transparent. Pages 108 and 109

Use the transparent menu ☐ **Enable** ☐ **Disable**

### ♦ Clock display mode and location

You can set the display mode and position of the clock. Page 108

| Clock display mode | | | Location | | | |
|---|---|---|---|---|---|---|
| Mode 1 | Mode 2 | Mode 3 | Upper left | Upper right | Lower left | Lower right |
| | | | | | | |

### ♦ Recorder status and title display

You can set the items to be displayed on the screen. You can also set the recorder's title. Pages 108 and 109

| Status | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Remain 1 | | Remain 2 | | Status | | Active HDD | | Recorder title | |
| Enable | Disable | Enable | Disable | Enable | Disable | Enable | Disable | Enable | Disable |
| | | | | | | | | | |

| Recorder title | [ ] |
|---|---|

### ♦ Camera number and title display

You can set the display mode and position of camera numbers. You can also set the camera titles. Page 109

| Display mode | | | Location | | | |
|---|---|---|---|---|---|---|
| Number | Title | Off | Upper left | Upper right | Lower left | Lower right |
| | | | | | | |

| | Camera title |
|---|---|
| Camera number 1 | [ ] |
| Camera number 2 | [ ] |
| Camera number 3 | [ ] |
| Camera number 4 | [ ] |
| Camera number 5 | [ ] |
| Camera number 6 | [ ] |
| Camera number 7 | [ ] |
| Camera number 8 | [ ] |
| Camera number 9 | [ ] |
| Camera number 10 | [ ] |
| Camera number 11 | [ ] |
| Camera number 12 | [ ] |
| Camera number 13 | [ ] |
| Camera number 14 | [ ] |
| Camera number 15 | [ ] |
| Camera number 16 | [ ] |

**Multiplexer setting** You can set the split screen of Outputs A and B and sequential display. Pages 110 and 111

## Output A

You can make settings for displaying Output A and the image switching interval in the sequential display mode. Page 110

| 4-split screen | | | | | | | | 9-split screen | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split 4a | | Split 4b | | Split 4c | | Split 4d | | Split 9a | | | Split 9b | | |
| [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| | | | | | | | | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |

| 10-split screen | | | | 13-split screen | | | | 16-split screen | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Split 10a | | Split 10b | | Split 13a | | Split 13b | | | | | |
| [ ] | [ ] | [ ] | [ ] | [ ] [ ] [ ] [ ] | | [ ] [ ] [ ] [ ] | | [ ] [ ] [ ] [ ] | | | |
| | | | | [ ] | | [ ] [ ] | [ ] | [ ] [ ] [ ] [ ] | | | |
| [ ] [ ] | [ ] [ ] | [ ] [ ] | [ ] [ ] | [ ] | | [ ] [ ] | | [ ] [ ] [ ] [ ] | | | |
| [ ] [ ] | [ ] [ ] | [ ] [ ] | [ ] [ ] | [ ] [ ] [ ] [ ] | | [ ] [ ] [ ] [ ] | | [ ] [ ] [ ] [ ] | | | |

| Single sequential display | Split sequential display | | |
|---|---|---|---|
| | 4-split | | |
| [ ]→[ ]→[ ]→[ ]→[ ]→[ ]→[ ]→[ ]→ | abcd | abc | ab |
| [ ]→[ ]→[ ]→[ ]→[ ]→[ ]→[ ]→[ ] | | | |

| Display interval | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1sec | 2sec | 3sec | 4sec | 5sec | 6sec | 7sec | 8sec | 9sec | 10sec | 11sec | 12sec | 13sec | 14sec | 15sec | 16sec | 17sec | 18sec | 19sec | 20sec | 21sec | 22sec | 23sec | 24sec | 25sec | 26sec | 27sec | 28sec | 29sec | 30sec |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

## Output B

You can make settings for displaying Output B and the image switching interval in the sequential display mode. Page 110

| 4-split screen | | | | | | | | 9-split screen | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Split 4a | | Split 4b | | Split 4c | | Split 4d | | Split 9a | | | Split 9b | | |
| [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| | | | | | | | | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |
| [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] |

| 10-split screen | | | | 13-split screen | | | | 16-split screen | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Split 10a | | Split 10b | | Split 13a | | Split 13b | | | | | |
| [ ] | [ ] | [ ] | [ ] | [ ] [ ] [ ] [ ] | | [ ] [ ] [ ] [ ] | | [ ] [ ] [ ] [ ] | | | |
| | | | | [ ] | | [ ] [ ] | [ ] | [ ] [ ] [ ] [ ] | | | |
| [ ] [ ] | [ ] [ ] | [ ] [ ] | [ ] [ ] | [ ] | | [ ] [ ] | | [ ] [ ] [ ] [ ] | | | |
| [ ] [ ] | [ ] [ ] | [ ] [ ] | [ ] [ ] | [ ] [ ] [ ] [ ] | | [ ] [ ] [ ] [ ] | | [ ] [ ] [ ] [ ] | | | |

| Single sequential display | Split sequential display | | |
|---|---|---|---|
| | 4-split | | |
| [ ]→[ ]→[ ]→[ ]→[ ]→[ ]→[ ]→[ ]→ | abcd | abc | ab |
| [ ]→[ ]→[ ]→[ ]→[ ]→[ ]→[ ]→[ ] | | | |

| Display interval | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1sec | 2sec | 3sec | 4sec | 5sec | 6sec | 7sec | 8sec | 9sec | 10sec | 11sec | 12sec | 13sec | 14sec | 15sec | 16sec | 17sec | 18sec | 19sec | 20sec | 21sec | 22sec | 23sec | 24sec | 25sec | 26sec | 27sec | 28sec | 29sec | 30sec |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**Multiplexer setting** Continued.

## ◆ Alarm display
You can set the alarm display. Page 110

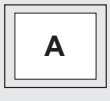
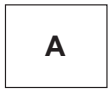
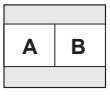
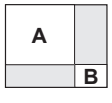
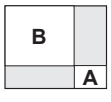
Alarm display mode ☐ **Off** ☐ **Output A** ☐ **Output B** ☐ **Output A/B**

| | CAM 1 | CAM 2 | CAM 3 | CAM 4 | CAM 5 | CAM 6 | CAM 7 | CAM 8 | CAM 9 | CAM 10 | CAM 11 | CAM 12 | CAM 13 | CAM 14 | CAM 15 | CAM 16 | Split 4a | Split 4b | Split 4c | Split 4d |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sensor 1 | | | | | | | | | | | | | | | | | | | | |
| Sensor 2 | | | | | | | | | | | | | | | | | | | | |
| Sensor 3 | | | | | | | | | | | | | | | | | | | | |
| Sensor 4 | | | | | | | | | | | | | | | | | | | | |
| Sensor 5 | | | | | | | | | | | | | | | | | | | | |
| Sensor 6 | | | | | | | | | | | | | | | | | | | | |
| Sensor 7 | | | | | | | | | | | | | | | | | | | | |
| Sensor 8 | | | | | | | | | | | | | | | | | | | | |
| Sensor 9 | | | | | | | | | | | | | | | | | | | | |
| Sensor 10 | | | | | | | | | | | | | | | | | | | | |
| Sensor 11 | | | | | | | | | | | | | | | | | | | | |
| Sensor 12 | | | | | | | | | | | | | | | | | | | | |
| Sensor 13 | | | | | | | | | | | | | | | | | | | | |
| Sensor 14 | | | | | | | | | | | | | | | | | | | | |
| Sensor 15 | | | | | | | | | | | | | | | | | | | | |
| Sensor 16 | | | | | | | | | | | | | | | | | | | | |

## ◆ Covert camera
You can select to display or hide images from cameras. Page 111

| | Display | Hide |
|---|---|---|
| CH 1 | | |
| CH 2 | | |
| CH 3 | | |
| CH 4 | | |
| CH 5 | | |
| CH 6 | | |
| CH 7 | | |
| CH 8 | | |
| CH 9 | | |
| CH 10 | | |
| CH 11 | | |
| CH 12 | | |
| CH 13 | | |
| CH 14 | | |
| CH 15 | | |
| CH 16 | | |

## ◆ XGA output
You can set the XGA output format and picture quality. Page 111

| Display layout setting | | | | | Sharpness setting | | | |
|---|---|---|---|---|---|---|---|---|
|   |   |   |   |   | Low | Middle | High | Off |
| | | | | | | | | |

**Setting the playback functions** You can make settings related to playback. Pages 111 and 112

| Activate repeat playback | | Display a playback image in field | | Image originality check play | | Auto expiration on the specified date | | |
|---|---|---|---|---|---|---|---|---|
| Enable | Disable | Enable | Disable | Enable | Disable | Enable | Disable | **001 to 365 day** (The factory-default setting is 001 day.) |
| | | | | | | | | [ ] day |

**Loading/saving/initializing the menu settings** You can reset the menu settings to the defaults. Use this menu to save the menu settings of the recorder and to load the saved menu settings to this recorder. Page 113

**Communication setting** You can make settings related to communication. Pages 114 to 116

◆ **RS-232C setting** You can make settings for communicating with a personal computer. Page 114

| RS-232C operation | | | | RS-232C setting | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Transmission rate | | | | | Data bit length | | Parity bit | | | Stop bit length | | CR/ CR•LF | |
| Remote A | Remote B | Remote C | Off | 1200 bps | 2400 bps | 4800 bps | 9600 bps | 19200 bps | 8 bits | 7 bits | None | Odd | Even | 1 bit | 2 bits | CR | CR•LF |
| | | | | | | | | | | | | | | | | | |

◆ **RS-485 cascade setting** You can make settings for cascade function. Page 114

| Recorder address | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off | ID:01 | ID:02 | ID:03 | ID:04 | ID:05 | ID:06 | ID:07 | ID:08 | ID:09 | ID:10 | ID:11 | ID:12 | ID:13 | ID:14 | ID:15 | ID:16 |
| | | | | | | | | | | | | | | | | |

**Communication setting** Continued.

**LAN setting** You can set the IP address, subnet mask, and gateway. Pages 114 and 115

| | | |
|---|---|---|
| IP address | | 192.168.000.100 |
| Subnet mask | | 255.255.255.000 |
| Gateway | | 000.000.000.000 |

**LAN service port settings** You can set the service port. Page 114

| | | | |
|---|---|---|---|
| Web | COM port | | 00080 |
| | SSL port | | 00443 |
| Network software | COM port | | 53705 |

**E-mail notification - Address setting** You can display the e-mail address for alarm notification. Pages 114 and 115

**E-mail notification - Details** You can display the details of the alarm notification. Page 115

**IP alarm notification - Address setting** You can display the alarm notification port. Page 115

**IP alarm notification - Details** You can display the details of the alarm notification. Page 115

**FTP transmission settings** You can display the details of the FTP notification settings. Page 115

**PTZ camera setting** You can make settings for the cameras to be controlled. Page 116

| | Protocol | Port | | ID | Reverse | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Pan | | Tilt | |
| | | RS-232C | RS-422/485 | | Disable | Enable | Disable | Enable |
| Camera number 1 | [ ] | | | [ ] | | | | |
| Camera number 2 | [ ] | | | [ ] | | | | |
| Camera number 3 | [ ] | | | [ ] | | | | |
| Camera number 4 | [ ] | | | [ ] | | | | |
| Camera number 5 | [ ] | | | [ ] | | | | |
| Camera number 6 | [ ] | | | [ ] | | | | |
| Camera number 7 | [ ] | | | [ ] | | | | |
| Camera number 8 | [ ] | | | [ ] | | | | |
| Camera number 9 | [ ] | | | [ ] | | | | |
| Camera number 10 | [ ] | | | [ ] | | | | |
| Camera number 11 | [ ] | | | [ ] | | | | |
| Camera number 12 | [ ] | | | [ ] | | | | |
| Camera number 13 | [ ] | | | [ ] | | | | |
| Camera number 14 | [ ] | | | [ ] | | | | |
| Camera number 15 | [ ] | | | [ ] | | | | |
| Camera number 16 | [ ] | | | [ ] | | | | |

## Settings of the present time and menu language

<Clock and language>

### Clock setting

You can adjust the present time.

**Step 1 Set the month, day, year, hour, minute, and second in order, and then press [Set].**

**Step 2 Select [Setting] next to [Present time zone].**

- <Zone setting of time> screen appears.

**Step 3 Set the time zone depending on the location of the recorder and then select [Set].**

- After finishing the setting, select [Return] to return to the screen of step 1.

**Step 4 Set the day light saving setting.**

**[Auto]:** Automatically adjusts the clock according to the settings. For the detailed settings, select [Setting] and then use the [In] area to set the time and date for advancing the clock and [Out] area for putting back the clock.

**[Off]:** Auto day light saving function is not used.

**Notice**

- Before you start recording, set the present date and time correctly.
- Before you operate the recorder, check that the clock is accurately adjusted.

**Tips**

- The time is indicated by the 24-hour system.
- This recorder uses the 4-digit year format. The year range is 37 years from January 1, 2001 to December 31, 2037. The recorder automatically compensates for leap year. After December 31, 2037, the displayed date goes back to January 1, 2001.

### Language setting

You can select the language of the menu screen display from 3 languages. As ENGLISH is selected for the initial setting, follow the procedure below if you want to select a language other than ENGLISH.

**Step 1 Select the language you want to use.**

- After you change the language, select [Set].

## Settings related to the warning display and rear terminals

<Warning display · EXT terminal setting>

### ♦ Warning display · Buzzer · Call-out 1

#### Remain

You can set the recorder's operation performed when the remaining capacity runs out or reaches the designated level in the normal recording area, alarm recording area, emergency recording area, or archive device.

**Step 1 Set the threshold level of remaining capacity in each area.**

**[-]:** No signal is output.

**Step 2 Set the recorder's operation performed when the remaining capacity reaches to the threshold level designated in step 1.**

**[Warning]:** When the remaining capacity reaches the threshold level, a warning is displayed on the screen. With [Warning] disabled, you cannot select [Buzzer] and [Call-out].

**[Buzzer]:** When the remaining capacity reaches the threshold level, a buzzer sounds.

**[Call-out]:** When the remaining capacity reaches the threshold level, a warning signal is output to the device connected to the CALL OUT terminal on the rear panel.

- These options become active when you check the boxes.
- When the threshold level is set to [-] in step 1, you cannot select these options.

**Notice**

- You can make settings only for the areas created by the partition setting (☞ page 41).
- The call-out setting uses photocoupler output in order to decrease malfunction caused by connection. Make connections correctly referring to "CALL OUT output terminal" on ☞ page 25.

**Tips**

- For the relation between the warning display and the call-out signal output, see ☞ pages 134 to 137. Warning displays for which [Call-out signal output] is determined as [Common] are displayed unconditionally. For those determined as [Selectable], you can select whether or not to output call-out signals.

### Button sound

You can select whether or not to sound a beep when the buttons, jog dial, or shuttle ring on the front panel of the recorder are operated.

**Step 1 Select to enable or disable the button beep.**

- With the box checked, the button beep is heard.

### Start alarm recording

**Step 1 Enable or disable the buzzer.**

- When the box checked, the buzzer sounds when the recorder starts alarm recording or emergency recording.

### Communication

**Step 1 Enable or disable the buzzer.**

- With the box checked, a buzzer sounds via the personal computer.

Tips

- When the buzzer of [Communication] is selected, it is controlled remotely via RS-232C command, etc.

## ♦ Warning display • Buzzer • Call-out 2

You can set the recorder's operation performed when it detects an error.

**Step 1 Set the recorder's operation performed when it detects an error.**

**[Warning]:** A warning is displayed on the screen. With [Warning] disabled, you cannot select [Buzzer] and [Call-out].

**[Buzzer]:** A buzzer sounds.

**[Call-out]:** A warning signal is output to the device connected to the CALL OUT terminal on the rear panel.

Tips

- For details of errors, see ☞ pages 134 and 137.

System reboot .....LOG5100
No main HDD .....LOG61□□
LOG6200
LOG64□□
LOG6500
Error in REC mode
(Normal recording, archive).....LOG14□□
LOG56□□
LOG57□□
LOG74□□
Error in playback/copy mode.....LOG24□□
LOG34□□
No camera signal.....LOG54□□
High temperature.....LOG5200
LOG5201
Fan stop.....LOG5300

## ♦ Mode-out • Remaining capacity

### Mode-out 1 to 4

The recorder status is output from the MODE OUT terminals on the rear panel (by short-circuiting the contact). There are 4 MODE OUT terminals and you can allocate different output signals to them individually.

**Step 1 Set the trigger for each MODE OUT terminal (1 to 4).**

**[REC]:** A trigger signal is output during recording.

**[Play]:** A trigger signal is output during playback.

**[Remain 1]:** A trigger signal is output when the remaining capacity of HDD reaches the level designated by [Remain 1] at the bottom of the screen.

**[Remain 2]:** A trigger signal is output when the remaining capacity of HDD reaches the level designated by [Remain 2] at the bottom of the screen.

**[Power on]:** A trigger signal is output while the power of the recorder is on.

**[Alarm]:** A trigger signal is output during alarm recording and emergency recording.

**[LAN]:** Signal output is controlled via the LAN-connected PC.

**[LAN(2s)]:** Mode-out is kept active for about 2 seconds by the control from the LAN-connected PC.

**[LAN(10s)]:** Mode-out is kept active for about 10 seconds by the control from the LAN-connected PC.

**[Off]:** No signal is output.

**Step 2 Set the mode-out output status in [Polarity].**

**[Open]:** The contact is opened when the mode-out is active.

**[Close]:** The contact is closed when the mode-out is active.

**Notice**

- When you enable the warning about remaining capacity by the MODE OUT terminal, the mode-out output status is maintained even though you turn off the power by pressing the POWER button.

### Remain 1 and 2

Warning is issued to notify that the remaining capacity runs short during recording. You can designate the device and threshold level of the remaining capacity.

Warning is issued in the following ways when the remaining capacity decreases to the threshold level.

- When the display of the operation mode is enabled, "REM" is displayed to the left of the remaining capacity displayed on the screen. (☞ page 22)
- To set the buzzer or call-out, see ☞ page 105.

**Step 1 Select a device.**

**[Normal]:** Warning is displayed when the capacity of the normal recording area decreases to the threshold level.

**[Alarm]:** Warning is displayed when the capacity of the alarm recording area decreases to the threshold level.

**[EMR]:** Warning is displayed when the capacity of the emergency recording area decreases to the threshold level.

**[Archive]:** Warning is displayed when the capacity of the archive device decreases to the threshold level.

**[Off]:** Warning is not issued even when the HDD capacity decreases to the threshold value.

**Step 2 Set the threshold level of the remaining capacity.**

- Set the threshold level for issuing warning.

**Notice**

- Only areas created by the partition setting (☞ page 41) are displayed.

## ♦ Event terminal

You can set the functions allocated to the EVENT terminals (1 to 3) on the rear panel.

**Step 1 Allocate a function to Event 1 to 3.**

- [Event 1] corresponds to the EVENT 1 terminal, [Event 2] to the EVENT 2 terminal, and [Event 3] to the EVENT 3 terminal.

  **[REC (edge)]:** When the EVENT terminal is grounded, recording starts.

  **[REC (level)]:** Recording is performed while the EVENT terminal is being grounded.

  **[Rec stop]:** When the EVENT terminal is grounded, recording stops.

  **[Program 1 to 3]:** When the EVENT terminal is grounded, the program registered to Program 1 to 3 is started. When no program is registered, you cannot select this item.

  **[ADC]:** When the EVENT terminal is grounded, the recorder cancels the alarm display function and displays the screen that was displayed before the alarm display.

  **[Off]:** The recorder does not operate even when the EVENT terminal is grounded.

**Step 2 To check the program files, select [Next] next to [View the program files].**

- The registered programs are displayed.

**Step 3 To read the program files, select [Execute] next to [Read program files].**

- You can read and overwrite the program data copied to a USB memory device.
- You cannot modify 3 programs individually.

**Step 4 To delete the program files, select [Execute] next to [Clear program files].**

- All the registered program files are deleted. The events set in [Program 1 to 3] are set to [Off].

Tips

- When you execute [Forced stop of program] on the <Warning display • Ext terminal setting> screen, the ongoing programs are all terminated forcedly. Forced termination can be executed while the programs are running.
- The character string specified by the program appears on the screen while the program is running.

# On-screen display settings

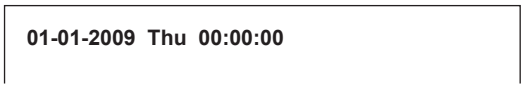
<Information display setting>

## ♦ Clock display mode and location

You can set the display mode and position of the clock.

**Step 1 Select the clock display mode.**

**[Mode 1]:**




**[Mode 2]:**

**[Mode 3]:** The clock is not displayed.

**Step 2 Select the clock display position.**

## ♦ Recorder status and title display

You can select the recorder's operation status to be displayed.

**Step 1 Select the modes you want to display on the screen.**

**[Remain 1]:** The remaining capacity of the device selected in [Remain 1] of [Mode-out • Remaining capacity] is displayed.

**[Remain 2]:** The remaining capacity of the device selected in [Remain 2] of [Mode-out • Remaining capacity] is displayed.

**[Status]:** The recorder's operation status (playback, normal recording, alarm recording, emergency recording, etc.) is displayed.

**[Active HDD]:** Device being recorded or played back is displayed.

**[Recorder title]:** The recorder title you set is displayed.

- The modes you check the boxes are displayed on the screen.
- The display positions of the selected modes are automatically determined depending on the clock display position.

Tips

- You cannot display [Remain 1] and [Remain 2] when [HDD] is set to [Off] on the <Mode-out • Remaining capacity> screen (☞ page 107).

**Step 2 When you enable [Recorder title] in step 1, set the recorder title.**

- When you select [Setting], the screen for setting the recorder title is displayed.

Tips

- For an example of screen display, see ☞ page 22.
- The recorder title is displayed at the top of the operation mode display.
- You can set the recorder title via the Web function using a personal computer. (☞ Page 91)

**Step 3 Enter the recorder title using the characters displayed on the screen.**

## ♦ Camera number and title display

You can set a title for each of the connected cameras. By setting the camera display mode to [Title], you can configure an easy-to-view monitoring system where the locations of the cameras are displayed as camera titles.

**Step 1 Select the display mode of the camera information.**

**[Number]:** The camera numbers are displayed.

**[Title]:** The camera titles you set are displayed. Camera titles can be recorded together with images.

**[Off]:** Nothing is displayed.

**Step 2 Select the display position.**

- With the display mode set to [Title], the titles are displayed at the top when you select [Upper left] or [Upper right], and at the bottom when you select [Lower left] or [Lower right].

**Step 3 Select [Setting] of the camera of which title you want to set.**

- The screen for setting the camera title is displayed.

**Step 4 Enter the camera title using the characters displayed on the screen.**

Tips

- You can set the camera titles via the Web function using a personal computer. (☞ Page 91)
- Up to 16 characters can be used for the title.

  The number of characters displayed on the screen is:

  1/16-screen: Up to 10 characters

  1/9-screen: Up to 14 characters

  1/4-screen: Up to 16 characters

  Single screen: Up to 16 characters

## ♦ Use the transparent menu

You can make the screen menus transparent.

**Step 1 Select whether or not to make the menus transparent.**

**[Use the transparent menu]:** With the box checked, the displayed menus are made transparent and you can view images from cameras through the menus.

## Multiplexer settings

<Multiplexer setting>

You can configure the multiplexer settings for Output A and Output B individually.

### ♦ Output A/Output B

You can set the camera numbers displayed on the split screen on the monitor connected to OUTPUT A or OUTPUT B. (The settings of Output A are applied to OUTPUT A, and those of Output B to OUTPUT B.) You can also make sequential display settings. Sequential display is a function to automatically switch the displayed images from the selected cameras at constant intervals.

**Step 1 Select [Setting] next to the output you want to set (Output A or Output B).**

- The screen for setting the selected output is displayed.

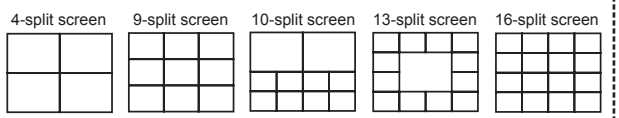
#### Copy Output A settings

You can copy the settings of Output A to Output B.

**Step 1 Select [Execute] next to [Copy Output A settings].**

- Select [Yes] on a confirmation screen.

#### 4-split screen to 16-split screen




Set the camera numbers to be displayed on each split screen.
You can select different cameras for Output A and Output B.

**Step 1 Select [Setting] next to the split screen mode you want to change.**

- The screen for setting the selected split screen mode is displayed.

**Step 2 Left-click repeatedly on the number until the desired camera number appears.**

- Numbers from 1 to 16 and [- -] are displayed.

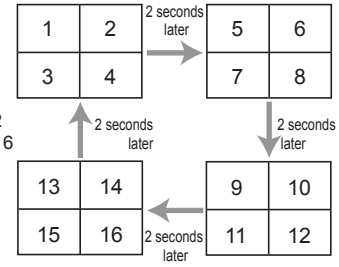
**Notice**

- You cannot set more than one same camera number within the same split screen mode.
- When you select [- -], the camera number is displayed as [--] on the normal screen.

#### Sequential display

**Example**

When you make settings as follows:
Split 4a: Camera numbers 1 to 4
Split 4b: Camera numbers 5 to 8
Split 4c: Camera numbers 9 to 12
Split 4d: Camera numbers 13 to 16
Sequential display: 4abcd
Display interval: 2 seconds




The screen display automatically switches.

**Step 1 Select [Setting] next to [Sequential display].**

- The screen for setting the sequential display is displayed.

**Step 2 To set the display order in the single-screen sequential display mode, set [Single sequential display].**

- When you click on the number, it changes from 1 to 16 and [- -] in order.

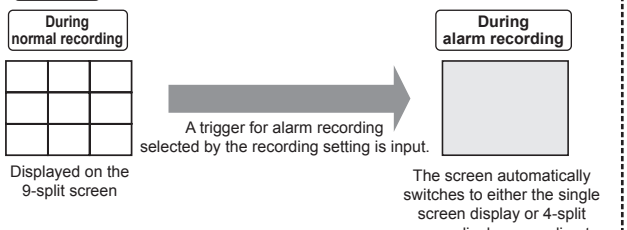
**Step 3 To set the display order in the split-screen sequential display mode, set [Split sequential display].**

**Step 4 To set the display switching interval in the sequential display mode, designate the desired interval in [Display interval].**

### ♦ Alarm display

When an alarm signal is input, the single screen or 4-split screen is displayed according to the pre-designated selection. When another alarm signal is input during alarm recording, the images from the cameras recorded upon input of the latest alarm signal are displayed on the single screen or 4-split screen. After the completion of the alarm recording, the screen returns to the original display mode.

**Example**


During normal recording
During alarm recording
A trigger for alarm recording selected by the recording setting is input.
Displayed on the 9-split screen
The screen automatically switches to either the single screen display or 4-split screen display according to the pre-determined selection.

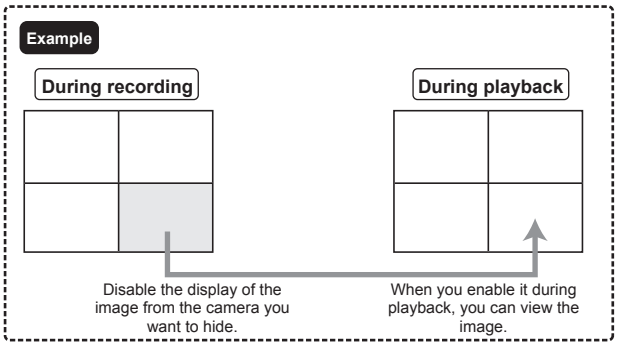
**Step 1 Select the output for activating the alarm display function.**

**[Off]:** Alarm display function is disabled.

**Step 2 Select the screen display mode to be used when an alarm signal is input for each of the connected sensors.**

## ♦ Covert camera

You can hide the images from the selected cameras by covering them with blue screens. During playback, images from the selected cameras are covered with black screens.


Example
During recording
During playback
Disable the display of the image from the camera you want to hide.
When you enable it during playback, you can view the image.

**Step 1 Select to display or hide the images from each camera.**

- When you check the boxes, images from the selected cameras are displayed.

  **[Enable]:** Images are displayed on the screen.

  **[Disable]:** Images are not displayed on the screen and are covered with blue screens (or black screens during playback).

**Notice**

- When you uncheck the boxes, images from those cameras are not displayed and covered with black screens during playback. To view playback images, check the boxes.
- You cannot display the image from the disabled camera on the single screen using the alarm display function.

**Tips**

- When the image from a camera of which covert camera setting is disabled is interrupted because of a failure in that camera, no warning is displayed on the screen. In addition, even when you enable the buzzer of [No camera signal], the buzzer does not sound. No call-out signal is output, but the event is registered in the system log list.
- Even when the covert camera setting of the camera selected for recording is disabled, images from that camera are recorded though they are not displayed on the screen.

## ♦ XGA output

Using the XGA output, you can use a PC monitor as a surveillance monitor.

**Step 1 Select the XGA output screen format.**

[A]: Image from Output A is displayed in the standard size.

[A]: Image from Output A is displayed on the entire screen.

[A B]: Images from Outputs A and B are tiled horizontally.

[A / B]: Images from Outputs A and B are arranged diagonally.

[B / A]: Images from Outputs A and B are arranged diagonally.

**Step 2 Adjust the quality of the images to be displayed.**

You can set the edge enhancement to [High], [Middle], or [Low].

**[Off]:** Edge enhancement is not adjusted.

**Tips**

- The border between the background and the displayed image may become white depending on the selected image quality.

# Settings related to playback

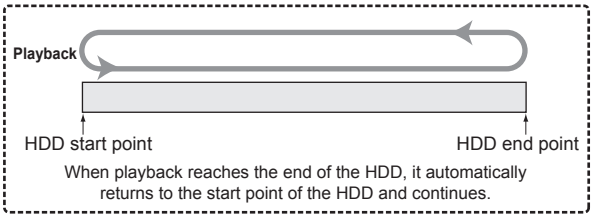
**<Setting the playback functions>**

**Notice**

- Stop playback before making settings.

### Activate repeat playback

Images stored in the HDD are played back repeatedly.


Playback
HDD start point
HDD end point
When playback reaches the end of the HDD, it automatically returns to the start point of the HDD and continues.

**Step 1 Select whether to enable or disable the repeat playback.**

- When you check the box, the repeat playback is enabled.

  **[Enable]:** When playback reaches the end of the recorded data, it automatically returns to the beginning of the data and continues.

  **[Disable]:** When playback reaches the end of the recorded data, it stops.

**Notice**

- When the playback returns to the HDD start point from the end, the clock displayed on the screen may not be updated for a while.

### Display a playback image in field

Some images may appear shaking because this recorder records images frame by frame. In this case, you can curb shaking images using this function.

**Step 1 Select whether or not to display images field by field.**

- When you check the box, the field display is enabled.

  **[Enable]:** Images are displayed field by field.

  **[Disable]:** Images are not displayed field by field.

### Image originality check play

You can detect images that were recorded by other recorder or images that were altered after recorded by this recorder. When such images are detected, a message saying "Data that may have been altered or recorded by other recorder were found." appears.

**Step 1 Select whether to enable or disable the image originality check play.**

- When you check the box, the image originality check play is enabled.

  **[Enable]:** The recorder performs the image originality check during playback. Upon detection of images recorded by other recorder or image that have been altered, it issues warning.

  **[Disable]:** The recorder does not perform the image originality check.

**Step 2 Select the device you want to subject to the check and then start playback. (☞ page 70)**

- The recorder performs the check on the image being displayed only. Therefore, for accurate detection, play back images in the single screen display mode.

**Notice**

- Because this check may interrupt recording or playback, disable this option normally.
- The recorder also issues warning when it plays back recorded data that have been damaged by some cause.
- When you perform complicated playback operations using the shuttle ring during the alternation check, a warning message saying "Data that may have been altered or recorded by other recorder were found." may appear. Perform the alteration check during normal playback or playback at varied playback rates.
- When problems are detected in more than one image from different cameras simultaneously, all the numbers of those cameras may not be shown by a warning.
- In the image originality check in the split screen display mode, if a large number of alterations are detected in the images of the cameras, all the numbers of those cameras may not be shown by a warning. For accurate detection, play back images in the single screen display mode.
- Even when the recorder detects continuous or multiple altered images, the warning display appears only once. To enable the warning display again, stop playback and then start it again.

### Auto expiration on the specified date

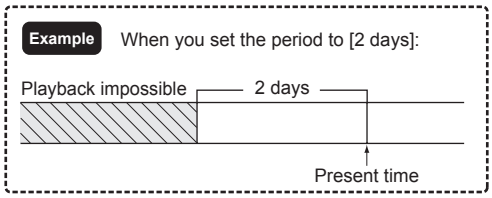
You can disable playback of data that were recorded before the designated period of time.

**Step 1 Select whether or not to use the auto expiration on the specified date function.**

- When you check the box, the auto expiration on the specified date function is enabled.

**Step 2 When you enabled this option in step 1, designate the period of time during which playback is possible.**

- The data recorded before the designated period from the present time cannot be played back anymore. This means that you can play back only data recorded for the designated period preceding the present time.




**Tips**

- Since data are managed in 64 MB units, the period where playback is possible may be shorter than the designated auto expiration setting. When the recording rate is set to a low value, the period where playback is possible tends to become especially short.

## Settings related to the menus

**<Loading/saving/initializing the menu settings>**

You can update the menu settings of this recorder by copying those of other DX-TL5716U to externally connected media and then loading them. Also, you can save the menu settings of this recorder in external media or the memory of this recorder.

You can save the menu settings you make in the recorder' s internal memory. Even when some settings are changed after that, you can restore the recorder according to the saved menu settings by loading them.

**Notice**

- During loading or saving of menu data, other operations are not accepted.
- When no HDD is registered as Main device, you cannot use a USB memory device.

### Load the menu settings

You can load the menu settings stored in external media or the recorder's memory to update the menu settings of the recorder.

**Notice**

- To load the existing menu settings to update the recorder's menu settings, configure the HDD operation settings (partition settings) of this recorder in the same way as that of the copy source recorder. Note that when the HDD setting configuration is different between the recorders, the menu settings cannot be updated.
- When the menu format is different (for example, when the menu structure is changed for function expansion), the menu settings cannot be updated.

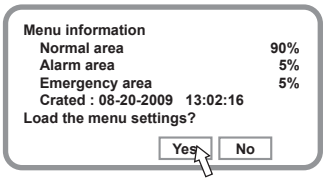
**Step 1 Select the device from which you want to load the menu settings.**

**[DVD/CD]:** You can load the menu settings saved on a DVD/CD disc.

**[USB memory]:** You can load the menu settings saved in a USB memory device.

**[Internal memory]:** You can load the menu settings saved in the recorder's internal memory.

**Step 2 Select [Execute].**




- The menu settings of this recorder are updated and then "Completed successfully." appears on the screen.
- When no device for loading the menu settings is inserted in the recorder, "No media" appears on the screen.

**Notice**

- You can load the menu settings only while the recorder is in the stop mode (while playback, recording, archive, or communication is stopped).
- The clock of this recorder is not updated by menu loading. Therefore, set the clock correctly.

### Save the menu settings

You can save the recorder's menu settings in external media or the recorder's internal memory.

**Step 1 Select the device in which you want to save the recorder's menu settings.**

**[DVD/CD]:** You can save the menu settings on a DVD/CD disc.

**[USB memory]:** You can save the menu settings in a USB memory device.

**[Internal memory]:** You can save the menu settings in the recorder's internal memory.

**Step 2 Select [Execute].**

- The menu settings of this recorder are saved.
- You can save the menu settings even during playback or recording.
- Upon completion of saving, "Completed successfully." appears on the screen.
- When no device for saving the menu settings is not inserted in the recorder, "No destination device" appears on the screen.

**Notice**

- It may take a few seconds for the recorder to start loading or saving the menu settings after [Execute] is selected.
- The menu settings are divided into two groups according to whether they can be saved or not as follows.
  <Main menu>
  - Device selection: Not saved.
  - Recorder information: Not saved.
  - Setup: All settings are saved except for the current time.
  - Recording setting: All settings are saved except for Auto setting and Data protect.
  - HDD registration: Only the HDD repeat recording settings and HDD sleep mode are saved.
  - Password setting: Not saved.

  <Other menus>
  - Search menu: Not saved.
  - Copy menu: All settings are saved except for the archive start time.
  - Bookmark menu: Not saved.

  <Settings configured by the Web browser>
  - All settings are saved except for the user registration settings.

### Initialize the menu settings

You can reset the menu settings to the factory defaults.

**Step 1 Select [Execute] to initialize the menu settings.**

**Notice**

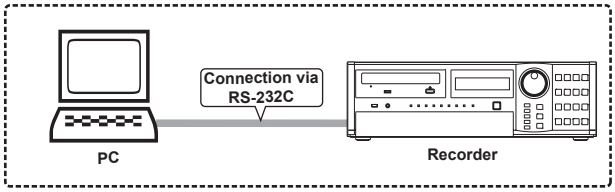
- The present time, password, network user ID and password, and HDD operation settings (partition settings) are not initialized.

## Settings related to communication

<Communication setting>

### ♦ RS-232C setting

You can remotely control the recorder using a PC connected to the RS-232C terminal of the recorder.




**Step 1 Select the communication mode.**

**[Remote A]:** The recorder is controlled by a PC and returns all types of operation status notification.

**[Remote B]:** The recorder is controlled by a PC and returns only responses to the command codes.

**[Remote C]:** The recorder is controlled by a PC and does not return any notification.

**[Off]:** The recorder is not controlled by a PC.

**Step 2 Set the following items.**

- Transmission rate
- Data bit length
- Parity bit
- Stop bit length
- CR/CR•LF (Carriage return and line feed)

**Notice**

- Set these items same as those of the PC to be connected.
- The command code table is contained in the CD supplied with the recorder.

### ♦ RS-485 cascade setting

You can make settings for the cascade function used via the keyboard connected to RS-485 terminal on this recorder.

**Step 1 Set the recorder address.**

**[Off]:** The cascade function is not used.

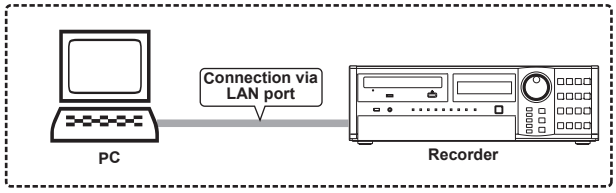
**[ID:01] to [ID:16]:** When the cascade function is used, set the ID number of the recorder.

**Notice**

- Set the recorder address uniquely.

### ♦ LAN setting

The recorder can communicate with a PC connected to its LAN port.




**Step 1 Set the IP address, subnet mask, and gateway.**

- The MAC address is shown on the screen.

**Notice**

- Do not assign "000.000.000.000" to the IP address and broadcast address. Otherwise, not only the communication functions but also the other functions of the recorder may not operate correctly.

#### LAN service port settings

**Step 1 Select [Setting] next to [LAN service port settings] on the <LAN setting> screen.**

- The <LAN service port settings> screen is displayed.

**Step 2 Set [COM port] and [SSL port] of the Web, and [COM port] of the special network software.**

- Set the port number for connecting to the PC.
- Normally, leave the settings as it is.

**Notice**

- If you are unfamiliar with network settings, you are recommended not to change the settings.
- For other communication port settings than [COM port] and [SSL port] of the Web and [COM port] of the special network software, use the special PC viewing/communication software. For the usage, refer to the instruction manual of the software.

#### E-mail notification - Address setting

**Step 1 Select [Confirm] next to [E-mail notification settings] on the <LAN setting> screen.**

- The <E-mail notification - Address setting> screen is displayed.

**Step 2 Check the settings of [Status], [Address setting], and [Recorder ID].**

- When you select [Test], test e-mail is sent to the selected address.

**Notice**

- To set [Recorder ID] and [Address setting], use the Web function of this recorder or the special PC viewing/communication software.

**Step 3 Select [Next] next to [E-mail notification - Details] to check the contents of the e-mail sent to the PC.**

**[Remain]:** Notified when a remaining capacity warning (call-out setting) is issued.

**[Temp/Fan]:** Notified when a high temperature is detected or the fan stops.

**[Reboot]:** Notified when an error occurs in the recorder.

**[REC]:** Notified when recording starts.

**[Alarm REC]:** Notified when alarm recording starts.

**[Sensor]:** Notified when a signal is input to the terminal on the rear panel.

**[No signal]:** Notified when video signal from the camera is lost.

**[Attach image]:** Notified when the e-mail image attachment function is used.

**Notice**

- To change the contents of e-mail, use the Web function of the recorder.

### IP alarm notification - Address setting

**Step 1 Select [Confirm] next to [IP alarm settings] on the <LAN setting> screen.**

- The <IP alarm notification - Address setting> screen is displayed.

**Step 2 Check the settings of [IP address] and [COM port].**

- These settings are for notifying the connected PC of issuance of warning and variation in the status such as when the rear terminal is short-circuited.
- When you select [Test], test e-mail is sent to the selected IP address and communication port.

**Notice**

- To change the IP addresses and communication ports, use the special PC viewing/communication software. For the usage, refer to the instruction manual of the software.
- No notification is sent to the broadcast address.

**Step 3 Select [Next] next to [IP alarm notification - Details] to check the contents of the e-mail sent to the PC.**

**[Remain]:** Notified when a remaining capacity warning (call-out setting) is issued.

**[Temp/Fan]:** Notified when a high temperature is detected or the fan stops.

**[Reboot]:** Notified when an error occurs in the recorder.

**[REC]:** Notified when recording starts.

**[Alarm REC]:** Notified when alarm recording starts.

**[Sensor]:** Notified when a signal is input to the terminal on the rear panel.

**[No signal]:** Notified when video signal from the camera is lost.

**Notice**

- To change the contents of e-mail, use the special PC viewing/communication software. For the usage, refer to the instruction manual of the software.

### FTP transmission settings

**Step 1 Select [Confirm] next to [FTP transmission settings] on the <LAN setting> screen.**

- You can check the settings of FTP notification.

**Notice**

- To change the FTP notification settings, use the special PC viewing/communication software. For the usage, refer to the instruction manual of the software.

**Tips**

- **Ports used by the recorder's communication functions.**

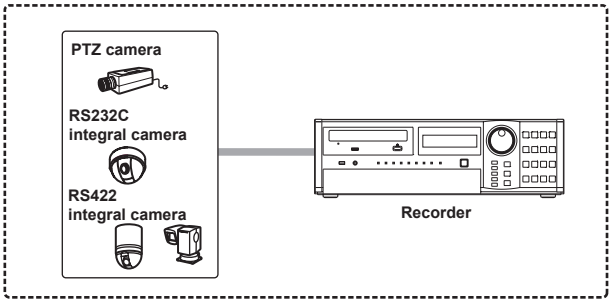
  You can check the available ports of this recorder on the <LAN service port settings> screen.

  To configure the IP masquerade of a BB router or other device for connection with the special PC viewing/communication software, set the following items.

  - Web port
  - SSL port
  - Special communication software port
  - RTP receiving port

## ♦ PTZ camera setting

You can make settings for controlling each of connected cameras.




**Step 1 Make detailed settings for the connected cameras.**

**[Protocol]:** You can set the type of the camera connected.

**[Port]:** You can set the port to output control signal. The port is automatically selected according to the input of the camera.

**[ID]:** You can set the address of the camera to be controlled. Set the ID same as that of the camera.

**[Reverse]:** You can reverse the panning/tilting direction depending on the installation condition.

Tips

- Operation of the camera may become impossible for some reason such as a specification change of the camera. In addition, some functions may become invalid.
- Operations or functions performed with this recorder are simplified ones. They are not equivalent to those of special control devices.

# Restricting the operations of the recorder

By setting passwords, you can restrict access to the recorder's functions. You can select from three operation lock levels and assign a unique password to each level, which makes it possible to restrict operations according to the authority given to respective users.

The lock function of this recorder has 2 types.

### ■ Simple lock

Password entry is not required to disable the lock. You can use the simple lock by pressing the LOCK button without setting a password for unlocking.

### ■ Password lock

Password entry is required to disable the lock. You can use the password lock by pressing the LOCK button after setting a password for unlocking.

There are 2 types of password lock as follows: (For details, see the right column.)

- Password lock for restricting operations (Levels 1 to 3)
- Password lock for HDD protection

**Notice**

- When the MAIN switch on the rear panel is set to OFF or when a menu is being displayed, you cannot enable or disable the simple lock and password lock.

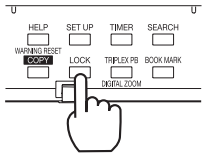
## Simple lock

When the simple lock is enabled, all the operations are prohibited and the recorder is locked in the current status.

### Enabling the simple lock

**Step 1 Press the LOCK button while the MAIN switch is set to ON.**

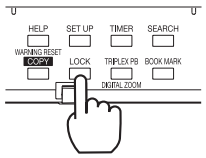
- The lock is enabled and the LOCK indicator illuminates.




### Disabling the simple lock

**Step 1 Press and hold down the LOCK button for 2 seconds or longer.**

- The lock is disabled and the LOCK indicator goes out.

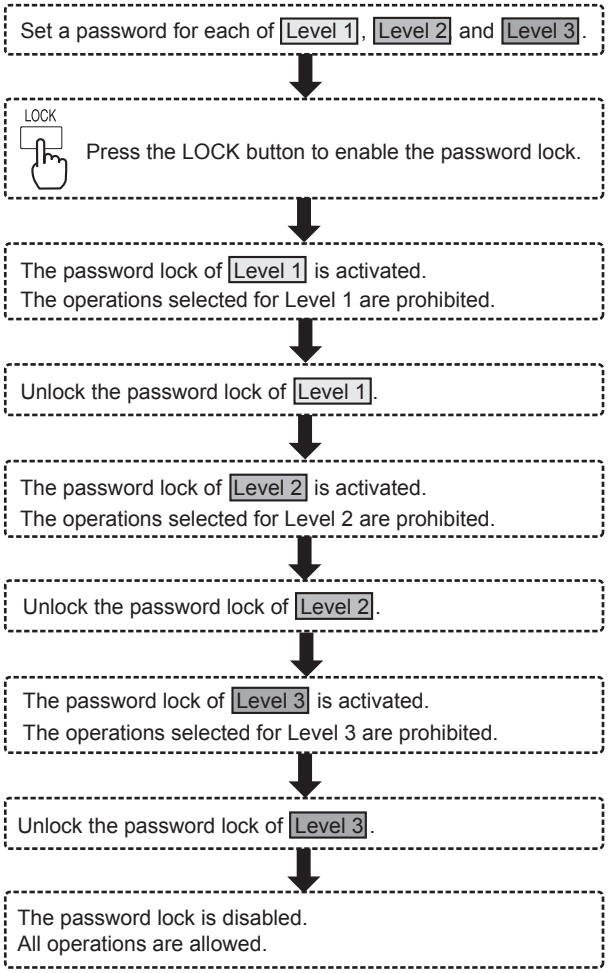



## Password lock

There are 2 types of password lock

### ■ Password lock for restricting operations

You can lock the operations in 3 levels. (Level 1 to 3)


Set a password for each of Level 1, Level 2 and Level 3.
LOCK
Press the LOCK button to enable the password lock.
The password lock of Level 1 is activated.
The operations selected for Level 1 are prohibited.
Unlock the password lock of Level 1.
The password lock of Level 2 is activated.
The operations selected for Level 2 are prohibited.
Unlock the password lock of Level 2.
The password lock of Level 3 is activated.
The operations selected for Level 3 are prohibited.
Unlock the password lock of Level 3.
The password lock is disabled.
All operations are allowed.

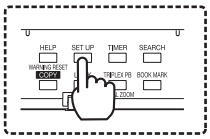
### ■ Password lock for HDD protection

You can prohibit deletion of recorded data from the Main device (☞ page 122 and unlocking of the locked data (☞ page 121).

## ♦ Registering a password

Use a 4-digit number as a password (consisting of numbers 0 to 9).

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




**or**

- <Main menu> is displayed.

**Step 2 Select [Password].**

- The <Password setting> screen is displayed.

**Step 3 Select [Setting] of the level you want to set.**

- The screen for setting a password for the selected level is displayed.

**Step 4 Enter a 4-digit password using the number buttons displayed on the screen.**

Tips

- You can also enter a password using the camera number buttons on the front panel of the recorder. Press the camera number buttons 1 to 9 to enter numbers 1 to 9 respectively. Press the camera number button 10 to enter 0.

**Step 5 In [Confirm], enter the password same as you entered in [Set].**

Notice

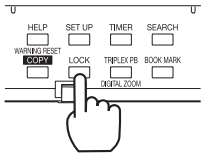
- Enter the same number in [Set] and [Confirm]. If you enter a different number, the password already entered is canceled and you are required to start from step 4 again.
- It is not necessary to set passwords for all three levels (Level 1 to 3). You may set passwords for desired levels only.

## ♦ Enabling the password lock

**Step 1 Press the LOCK button while the MAIN switch is set to ON.**

- The lock is enabled and the LOCK indicator illuminates.
- The password lock for HDD protection becomes enabled when you enter a password and close the setting screen.

  The password lock for HDD protection locks the data in the Main device only. It does not lock the data in the Copy device.

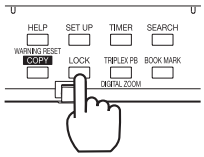



## ♦ Disabling the password lock

### Password for restricting operations (Levels 1 to 3)

**Step 1 Press and hold down the LOCK button for 2 seconds or longer to display the screen for disabling the lock.**

- When the menu operation is locked, the screen for disabling the lock is displayed as you try to display a locked menu.




Tips

- When the MAIN switch on the rear panel is set to ON, you can disable the password lock even though the POWER button on the front panel of the recorder is off.

  When the password lock is enabled with the power of the recorder off, you can disable the lock using the LCD on the front panel of the recorder. When you press and hold down the LOCK button for 2 seconds or longer, the LCD displays the menu for unlocking. Enter the password using the camera number buttons and press the LOCK button. The recorder is unlocked and you can turn on the power. When you want to cancel the unlocking procedure halfway, press the LOCK button again.

**Step 2 Enter a password for the desired level by pressing the number buttons.**

- The lock is disabled and the normal screen is displayed.

**Notice**

- With the password locks for Levels 1 to 3 enabled, when you disable the lock for Level 1 only, the lock for Level 2 remains enabled. When the locks for Level 1 and Level 2 are disabled, the lock for Level 3 becomes enabled.
- When the password locks are enabled for Level 1 and Level 2, you cannot disable only the lock for Level 2. Disable the lock from Level 1.
- Be sure to enter the passwords correctly. If you enter an incorrect password, the password already entered is canceled and you are required to enter the password again.
- When you want to cancel the unlocking procedure, select [Return] on the screen. The screen for unlocking automatically disappears when no buttons are pressed for 1 minute.

### Password lock for HDD protection

**Step 1 Select [Clear] of the desired area in the Main device of <Data clear> (☞ page 122).**

**Or, select [Setting] of [Delete data from the list] of <Data protect> (☞ page 121).**

- <Unlock Password for HDD protection> is displayed.

**Step 2 Press the number buttons to enter the password for HDD protection.**

- When you close the <Data clear> or <Data protect> screen, the password lock for HDD protection becomes enabled.

**Tips**

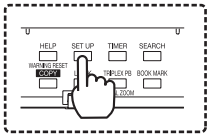
- If you forget the password, contact your dealer.
- Each time you execute the data deletion, <Unlock Password for HDD protection> is displayed and you are required to input the password.

## ♦ Changing a password

### Password for restricting operations (Levels 1 to 3)

**Step 1 Disable the password locks for Level 1 to Level 3.**

**Step 2 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




**or**

- <Main menu> is displayed.

**Step 3 Select [Password].**

- The <Password setting> screen is displayed.

**Step 4 Select [Setting] of the level of which password you want to change.**

- The screen for setting a password for the selected level is displayed.

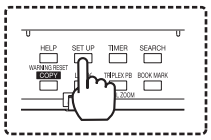
**Step 5 Select [Clear].**

- The registered password is cleared.

**Step 6 Enter a new password according to steps 4 and 5 of "Registering a password."**

### Password for HDD protection

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




**or**

- <Main menu> is displayed.

**Step 2 Select [Password].**

- The <Password setting> screen is displayed.

**Step 3 Select [Setting] next to [Password for HDD protection].**

- The screen for setting the password lock for HDD protection is displayed.

**Step 4 Select [Clear].**

**Step 5 Press the number buttons to enter the password.**

- The registered password is cleared.

**Step 6 Enter a new password according to steps 4 and 5 of "Registering a password."**

## ♦ Changing the lock mode from the password lock to simple lock

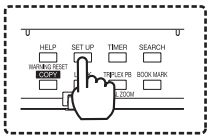
**Step 1 Disable the password locks for restricting operation (Level 1 to Level 3).**

**Step 2 Clear the registered passwords for Level 1 to Level 3.**

## ♦ Changing the operation restriction level

You can change the operations restricted in each level of the password lock for restricting operations (Level 1 to Level 3).

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




**or**

・ <Main menu> is displayed.

**Step 2 Select [Password].**

・ The <Password setting> screen is displayed.

**Step 3 Select [Setting] next to [Setting the lock level].**

・ The screen for setting the operation restriction level is displayed.

**Step 4 Select operations to be restricted using the ▲ or ▼ button in each level.**

・ The default settings are as follows.

| Operation restriction level | | | | Operations to be locked |
|---|---|---|---|---|
| Simple lock | Level 1 | | | Multiplexer /Sequence/E-zoom |
| | | | | Switching to the PTZ mode |
| | | | | Playback/Search/Bookmark menu display |
| | | | | Copy menu display |
| | | Level 2 | | Warning reset/Self-check |
| | | | | REC/REC STOP/POWER button operation |
| | | | | Timer recording |
| | | | | Recorder information menu display |
| | | | Level 3 | Setup menu display |
| | | | | Recording setting/Timer program setting/Data protect menu display |
| | | | | HDD registration/Data clear menu display |
| | | | | Password change/Operation restriction level setting |

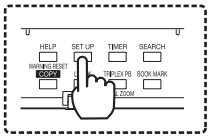
**Notice**

- The operation control level of Level 3 cannot be set higher than that of Level 2. The operation control level of Level 2 cannot be set higher than that of Level 1.
- The Level 3 is applied to the recorder operations listed below "Recorder information menu display" in the table.
- You can switch the audio even while the level 1 lock is enabled.

## Protecting recorded data

You can lock up to 500 designated areas to prevent accidental deletion of important data. Only data in the Main device can be protected.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




**or**

- <Main menu> is displayed.

**Step 2 Select [Recording setting].**

- The <Recording setting> screen is displayed.

**Step 3 Select [Setting] next to [Protect recorded data].**

- The <Data protect> screen is displayed.
- The data protect menu for the selected playback device is displayed. For playback device selection, see ☞ page 70.

**Step 4 Select [Setting] next to [Protect recorded data].**

- The screen for selecting data to be protected is displayed.

**Step 5 Designate the start and end points of the data to be protected.**

- Designate the start and end points by entering the date and time or using bookmarks.
- For registering bookmarks, see ☞ page 79.

**Step 6 Select [Protect].**

**Notice**

- Data are protected in blocks of 64 MB. The start time and end time of the protected data block(s) containing the designated book mark are displayed as the start point and end point. Therefore, the displayed start and end points may be inconsistent with the start and end times of the designated bookmark.

  You cannot protect the block containing data currently being recorded and the next block.

## Checking the protected data

**Step 1 Select [Setting] next to [List and search] on the <Data protect> screen.**

**[Search]:** You can display the image at the beginning of the selected data.

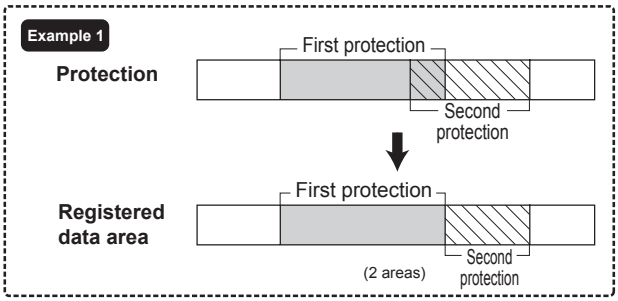
## Disabling data protection

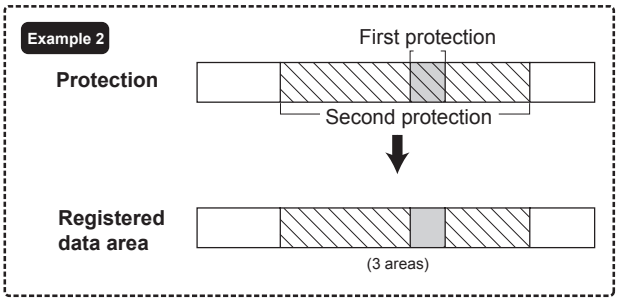
**Step 1 Select [Setting] next to [Delete data from the list] on the <Data protect> screen.**

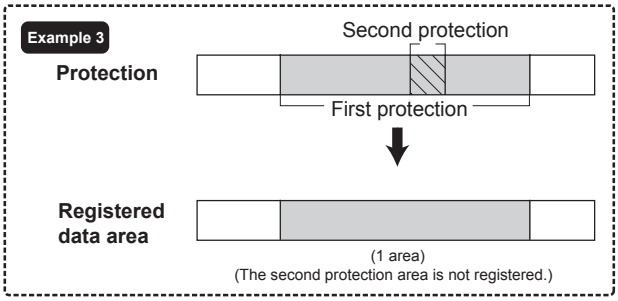
**[Delete]:** You can disable the data protection.

**Notice**

- If the designated start point of the protected data is behind the end point, the data are not protected.
- You can protect up to 500 data in total of the HDD (Normal), HDD (Alarm), and HDD (Emergency) areas. (☞ Page 41)
- When you delete recorded data containing protected data from the Main device, the protected data are also deleted.
- When protected data overlap, they are protected as follows:



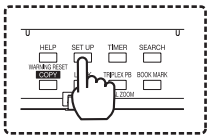



## Deleting recorded data

You can delete recorded data.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [HDD registration].**

- The <HDD registration> screen is displayed.

**Step 3 Select [Setting] next to [Data clear].**

- The <Data clear> screen is displayed.

**Step 4 Select [Clear] next to the device that contains the data you want to delete.**

**Notice**

- When you try to delete data from the Main device with the password lock for HDD protection enabled, the screen for disabling the password lock is displayed. In this case, disable the password lock and then delete the data.
- Note that you cannot delete the data from the HDD being in operation such as playback, recording, and copying.
- You can delete data from the Copy device during recording to the Main device.

  You cannot delete the data from the archive device or copy device being used for playback or copy.

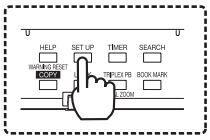
  You cannot delete the data in the copy device during archive. In addition, you cannot delete the data in the archive device during copy.
- Note that it takes about 30 to 60 minutes to delete data from a DVD disc.
- You cannot restore deleted data.
- To initialize the external devices, use the data deletion function of the recorder. If you initialize them using a PC or other device, they may become unusable with this recorder anymore.

## Stopping the rotation of HDD that is not in use for recording

**<HDD sleep mode>**

You can automatically stop the rotation of the HDD that is not in use during recording. Using the HDD sleep mode, you can reduce the load on the HDD.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




**or**

- <Main menu> is displayed.

**Step 2 Select [HDD registration].**

- The <HDD registration> screen is displayed.

**Step 3 Select [Setting] next to [HDD sleep mode].**

- The <HDD sleep mode> screen is displayed.

**Step 4 Select whether to enable or disable the HDD sleep mode.**

- When you check the box, the HDD sleep mode is enabled.

  **[Enable]:** The rotation of HDD that is not in use for recording is stopped.

  **[Disable]:** The HDD keeps rotating without stopping.

**Step 5 When you enabled the HDD sleep mode in step 4, set the HDD check time.**

- To prevent HDD from stopping for a long time when the HDD sleep mode is enabled, the recorder activates the HDD at the designated time once a day.
- You cannot execute the HDD check unless the power of the recorder is on.

**Notice**

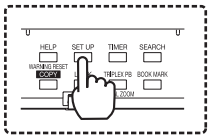
- The sleep mode works on the built-in HDD of the recorder. For external HDD, use the device supporting the sleep mode function.
- When the HDD already in the sleep mode is accessed for playback, search, copy, communication, or other operations, these operations may take long time to start because they start after the sleeping HDD boots up.
- [HDD is booting] is displayed when you start playback of the data in the HDD.

# Displaying the device information

## Checking the registered devices and recorded data area

### ♦ Displaying the <Device information> screen

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [Information].**

- The <Recorder information> screen is displayed.

**Step 3 Select [Confirm] next to [Device information] on the <Recorder information> screen.**

- The <Device information> screen is displayed.

### ♦ Displaying the Main device information

**Step 1 Display the <Device information> screen according to steps 1 to 3 of "Displaying the <Device information> screen" above.**

**Step 2 Select [Confirm] next to [Information of Main device].**

- Information such as the recording start and end dates and times, size (%), and remaining capacity of each area is displayed.

**Notice**

- Only areas created by the partition setting (☞ page 41) are displayed.

**Step 3 Select [Next] to display the detailed information of each HDD.**

- Information such as the device connection name, manufacturer, device name and size (GB) of each HDD is displayed.
- This procedure cannot be carried out when there is no internal HDD in the recorder.

  **[Detail]:** The recording start and end times of the selected HDD are displayed.

**Notice**

- Before displaying the latest information, check that the devices are correctly configured while the recorder is stopped. (☞ Page 39)

### ♦ Displaying the Copy device information

**Step 1 Display the <Device information> screen according to steps 1 to 3 of "Displaying the <Device information> screen" above.**

**Step 2 Select [Confirm] next to [Information of Copy device].**

- Information such as the recording start and end times, size (MB/GB), and remaining capacity of each device is displayed.

**Step 3 Select [Next] to display the detailed information of each device.**

- Information such as the device connection name, manufacturer, device name, and operating time is displayed.
- This procedure cannot be carried out when there is no device which is registered as the Copy device.

### ♦ Displaying the Archive device information

**Step 1 Display the <Device information> screen according to steps 1 to 3 of "Displaying the <Device information> screen" above.**

**Step 2 Select [Confirm] next to [Information of Archive device].**

- Information such as the recording start and end times, size (GB), and remaining capacity is displayed.

**Step 3 Select [Next] to display the detailed information.**

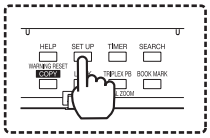
- Information such as the device connection name, manufacturer, device name and size (GB) of each device is displayed.
- This procedure cannot be carried out when there is no HDD which is registered as the Archive device.

  **[Detail]:** The recording start and end times of the selected HDD are displayed.

## Displaying the system log

You can display the count, dates and times of occurrence of system log events.

**Step 1 Press the SET UP button on the front panel of the recorder or left-click the mouse.**




or

- <Main menu> is displayed.

**Step 2 Select [Information].**

- The <Recorder information> screen is displayed.

**Step 3 Select [Confirm] next to [Log list].**

- The <Log list> screen is displayed.
- Up to 10000 events are registered. Events exceeding 10000 are registered, overwriting the existing events from the oldest.

Tips

- When an error or failure occurs while the log list is being displayed, close the log list and display it again. The error or failure is added to the list.
- The log of recording start operation (such as [REC ON]) is not registered after recovery from a power failure.
- Items displayed in the log list

**<Error log>** ..... LOG□□□□

☞ Pages 134 to 137.

**<Operation log>**

Recording (recorder) ..... REC ON/REC OFF
Recording (rear terminal)..... REC EXT ON/REC EXT OFF
Recording (communication) ..... REC COM ON/REC COM OFF
Simple lock status..... PS-E
Password lock status..... PS-1, PS-2, PS-3
Lock disabled..... PS-OFF, PS-4
Alarm recording prohibited ..... ALM OFF
Alarm recording allowed ..... ALM ON
Power failure..... P-LOSS
Reset ..... SYS RST
Communication..... Name of log-in user
Menu loading ..... MENU LOAD
Menu change..... MENU CHANGED
Timer on..... TIMER ON
Timer off..... TIMER OFF
Warning reset ..... WNG RESET
Self-check..... SELF-CHECK

# Function against power failure

## ♦ Power failure compensation circuit

This recorder is equipped with a power failure compensation circuit. When the recorder is fully charged for 48 hours, the date and time settings, timer recording settings, and menu settings are retained for about 1 month without power supply.

The clock accuracy declines if the power plug is not connected to the wall outlet for a long time of period.

In this case, it is recommended to check the present time setting.

## ♦ Power failure recovery recording

When a power failure occurs during recording or archiving, the recorder resumes operation after recovery from the power failure. When a power failure occurs during timer operation, the recorder resumes timer operation after recovery from the power failure if it is within the timer recording period. (The recorder may not be able to continue recording after recovery from the power failure when an error beyond recovery has occurred.)

Notice

- When a power failure occurs during recording, the recorded data may be broken or may become unable to be played back anymore.
- When a power failure occurs during recording, the image and audio data stored in the recorder's internal memory cannot be transmitted to the HDD.
- In case of a failure in the recorder, it may not be able to continue recording after recovery from the power failure.

Tips

- When a power failure occurs during alarm or emergency recording, the recorder resumes recording after recovery from the power failure.
- The log of recording start operation (such as [REC ON]) is not registered after recovery from a power failure.
- In the data recorded by this function after recovery from a power failure, playback images or audio may be disturbed or the search function may not work properly.
- Images recorded at the time of occurrence of a power failure may be disturbed. When the pre-alarm recording is enabled, the image recorded a specified pre-alarm time before preceding the occurrence of a power failure may also be disturbed.

## ♦ Record of turning-off of the MAIN switch on the rear panel

The date and time when a power failure occurs or the MAIN switch on the rear panel is turned off during operation or timer recording stand-by, are registered in the system log list (refer to "Displaying the system log" on ☞ page 125) together with other events. This list displays up to 10000 events.

## ♦ RESET button

When you press the RESET button on the rear panel using a ballpoint pen, etc., the microcomputer in this recorder is reset and the power turns off.

Tips

- In this case, the menu settings, present time, and image data are retained.

# Operation examples

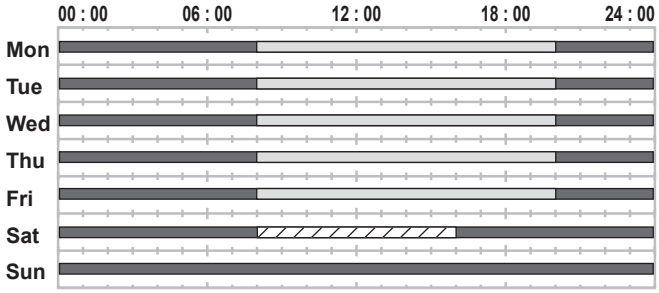
## Operation example 1

- **HDD operation setting →Mirroring**
- **Type of recording →Timer recording**

**All cameras, Motion detection recording**
**(3.8 FPS/Picture quality: L6/Duration: 5 minutes)**

**All cameras, Normal recording**
**(1 FPS/Picture quality: L6)**

**Cameras 1 to 4, Normal recording**
**(1 FPS/Picture quality: L6)**
**Cameras 5 to 16, Alarm recording**
**(1 FPS/Picture quality: L6)**




### Step 1 HDD operation setting

- Register the 2 internal HDDs as Main device referring to "Registering the internal HDD" on ☞ page 37 and select [Activate the mirroring mode].

### Step 2 Recording setting

- Configure the following settings referring to "Manual setting" on ☞ pages 55 to 59.
- The step numbers shown in the table correspond to those shown on the reference pages.

| Operation (Step 4) | Motion detection recording (Step 6) | Post-alarm time (Step 8) | Picture quality and FPS (Step 9) | | | | | | Alarm input/output, Input (Step 11) |
|---|---|---|---|---|---|---|---|---|---|
| | | | Camera | Active | Normal recording | | Alarm recording | | |
| | | | | | FPS | Quality | FPS | Quality | |
| Recording A | REC in alarm recording mode by MD | 5 minutes | All cameras | On | - - - | L5 | 3.8 FPS | L6 | MD-A |
| Recording B | REC in normal recording mode by MD | | All cameras | On | 1 FPS | L6 | - - - | L5 | |
| Recording C | REC in normal recording mode by MD | 5 minutes | 1 to 4 | On | 1 FPS | L6 | - - - | L5 | EXT |
| | | | 5 to 16 | On | - - - | L5 | 1 FPS | L6 | |

### Step 3 Motion detection setting

- Set the motion detection conditions of MD-A referring to the "Motion detection setting" on ☞ pages 62 and 63.

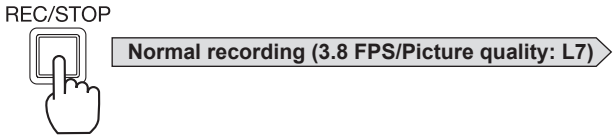
### Step 4 Timer recording setting

- Configure the following settings referring to the "Timer program setting" on ☞ pages 66 to 69 and then press the TIMER button on the front panel of the recorder.
- The step numbers shown in the table correspond to those shown on the reference pages.

| | Day (Step 4) | Start/End time (Step 5) | Mode (Step 6) | MD (Step 7) | SPL 1 (Step 8) |
|---|---|---|---|---|---|
| Program 1 | SPL1 | 00:00-00:00 | REC A | ON | Mon - Fri |
| Program 2 | SPL1 | 08:00-20:00 | REC B | OFF | |
| Program 3 | Sat | 00:00-00:00 | REC A | ON | |
| Program 4 | Sat | 08:00-16:00 | REC C | OFF | |
| Program 5 | Sun | 00:00-00:00 | REC A | ON | |

## Operation example 2

- **HDD operation setting → No mirroring**
- **Type of recording → Manual recording**
  **Normal recording (3.8 FPS/Picture quality: L7)**




Press the REC/STOP button
to start or stop recording.

### Step 1 Recording setting

- Configure the following settings referring to "Manual setting" on ☞ pages 55 to 59.
- The step numbers shown in the table correspond to those shown on the reference pages.

| Operation (Step 4) | Picture quality and FPS (Step 9) | | | | | |
|---|---|---|---|---|---|---|
| | Camera | Active | Normal recording | | Alarm recording | |
| | | | FPS | Quality | FPS | Quality |
| Recording A | All cameras | On | 3.8 FPS | L7 | - - - | L5 |

### Step 2 Press the REC/STOP button on the front panel of the recorder.

- For details of manual recording, see "Manual recording" on ☞ page 65.

## Operation example 3

- **HDD operation setting → No mirroring**
- **Type of recording → Manual recording**

  **Normal recording**

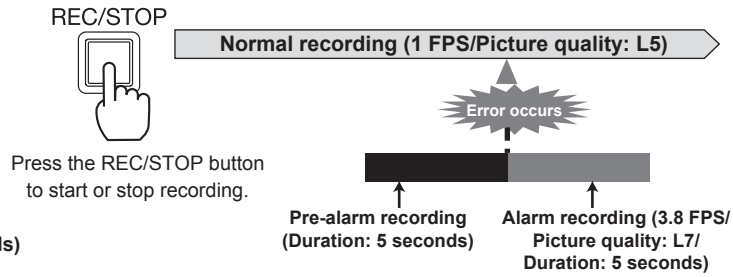
  **(1 FPS/Picture quality: L5)**

  **Alarm recording**

  **(3.8 FPS/Picture quality: L7/Duration: 5 seconds)**

  **Pre-alarm recording**

  **(Duration: 5 seconds)**


REC/STOP
Press the REC/STOP button to start or stop recording.
Normal recording (1 FPS/Picture quality: L5)
Error occurs
Pre-alarm recording (Duration: 5 seconds)
Alarm recording (3.8 FPS/ Picture quality: L7/ Duration: 5 seconds)

### Step 1 Recording setting

- Configure the following settings referring to "Manual setting" on ☞ pages 55 to 59.
- The step numbers shown in the table correspond to those shown on the reference pages.

| Operation (step 4) | Pre-alarm time (step 7) | Post-alarm time (step 8) | Picture quality and FPS (step 9) | | | | | | Alarm input/output, Input (step 11) |
|---|---|---|---|---|---|---|---|---|---|
| | | | Camera | Active | Normal recording | | Alarm recording | | |
| | | | | | FPS | Quality | FPS | Quality | |
| Recording A | 5 seconds | 5 seconds | 1 to 4 | On | 1 FPS | L5 | - - - | L5 | EXT |
| | | | 5 to 16 | On | - - - | L5 | 3.8 FPS | L7 | |

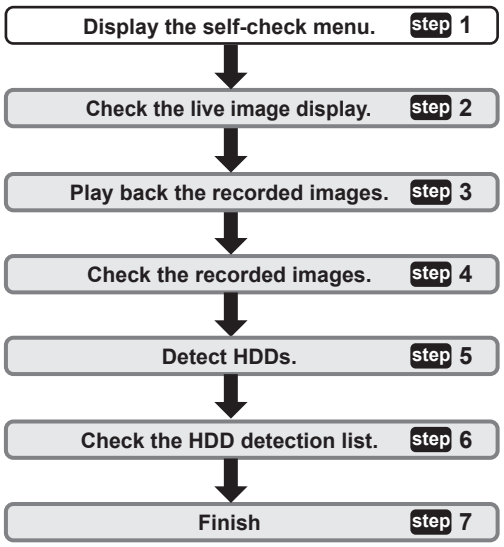
### Step 2 Press the REC/STOP button on the front panel of the recorder.

- For details of manual recording, see "Manual recording" on ☞ page 65.

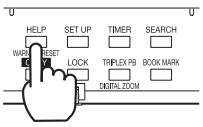
## Checking the status of the recorder

<Self-check>

This recorder uses many electronic parts and HDDs and malfunction may occur in them. By checking the status of the recorder (faulty or normal) using the self-check function, you can find a malfunction, if any, at an early stage and prevent the recorder from remaining faulty.


Display the self-check menu. step 1
Check the live image display. step 2
Play back the recorded images. step 3
Check the recorded images. step 4
Detect HDDs. step 5
Check the HDD detection list. step 6
Finish step 7

**Step 1 Press and hold down the HELP button on the front panel of the recorder for 5 seconds or longer.**




- The <Self-check> menu is displayed and a 16-split screen is displayed.
- When the power of the recorder is off, playback operations or the HELP button is locked (☞ pages 117 to 120), or a menu is being displayed, you cannot execute the self-check.

**Step 2 Check the live image display.**

- Check that the live images from all cameras are displayed.
- Select [Yes] when they are displayed, and select [No] when not. When you select [No], the HELP menu is displayed.

Tips

- To cancel the self-check halfway, press the HELP button on the front panel of the recorder.

**Step 3 Play back the recorded images.**

- When you select [Execute], the latest image of the selected playback device is displayed. To change the playback device, select the desired device in [Play device].

**Step 4 Check the recorded images.**

- Select [Yes] when the recent images are played, and select [No] when not. When you select [No], the HELP menu is displayed.
- To play back data stored in other device, select [Return] to display the previous screen, select the desired device in [Play device], and then select [Execute].

Notice

- When resent images are not recorded or recording has not been made frequently, an image recorded in the past may be played back.

**Step 5 Detect the connected HDDs.**

- When you select [Yes], information on the connected HDDs is displayed.

**Step 6 Check the HDD detection status.**

- Select [Yes] when all the connected HDDs are displayed, and select [No] when not. When you select [No], the HELP menu is displayed.

**Step 7 Select [Finish] to exit the self-check.**

- The recorder returns to the status before the self-check was executed.

If the problem with the recorder persist even after you check it according to the following chart, disconnect the power cord and contact your dealer.

| | Symptom | Where to check | Page |
|---|---|---|---|
| Installation | **The recorder does not turn on.** | ● Is the power cord properly plugged in?<br>● Check that the LOCK indicator is not illuminating.<br>● Check that the TIMER indicator is not illuminating.<br>● Check that the MAIN switch on the rear panel is not OFF. | -<br>16,117 - 120<br>16<br>20 |
| | **Power is on, but the recorder does not work.** | ● Check that the LOCK indicator is not illuminating.<br>● Check that the POWER indicator is not blinking.<br>The recorder does not work while the POWER indicator is blinking.<br>● The protection functions may be working. Reset the recorder by pressing the RESET button on the rear panel using a pointed object such as a ballpoint pen and then turn on the power again. | 16,117 - 120<br>16<br><br><br>21, 126 |
| | **No images are displayed on the monitor.** | ● Are the monitor and cameras connected correctly?<br>● Is the recorder receiving input signals from the selected cameras? Check this by displaying a 16-split screen. | 24<br>42 |
| | **Images displayed on the monitor are obscure.** | ● Are the cords and cables connected correctly?<br>● Is the camera focus adjusted correctly? | -<br>- |
| Recording | **Recording does not start.** | ● Check that the LOCK indicator is not illuminating.<br>● Is repeat recording enabled? | 16,117 - 120<br>40 |
| | **Recording does not stop.** | ● Check that the LOCK indicator is not illuminating.<br>● During normal recording, alarm recording, or emergency recording, press and hold down the REC/STOP button for 2 seconds or longer.<br>When alarm recording by motion detection is being performed repeatedly, set [Alarm input] to [Off] and then stop recording.<br>● Check that timer recording is not in progress.<br>To cancel timer recording, press and hold down the TIMER button for 2 seconds or longer. | 16,117 - 120<br>16<br><br><br><br>18 |
| | **Repeat recording does not start.** | ● Is repeat recording enabled? | 40 |
| | **Timer recording does not start.** | ● Are the date and time set accurately?<br>● Are the recording start and end times and the FPS rate set correctly?<br>● Is repeat recording enabled? | 105<br>66 - 69<br><br>40 |
| | **Alarm recording does not start.** | ● Check that FPS for alarm recording is not set to [---].<br>● Is there recording capacity remaining?<br>● Check that the recorder is not in the timer recording standby mode.<br>(Check that the TIMER indicator is not illuminating.)<br>● Are the external sensors and other devices connected correctly? | 56<br>-<br>16<br><br><br>24, 25 |

| | Symptom | Where to check | Page |
|---|---|---|---|
| Playback | **Playback does not start.** | ● Check that the LOCK indicator is not illuminating.<br>● Are there data in the selected device?<br>● Is the correct playback device selected? | 16,117 - 120<br>122<br>70 |
| | **Playback is interrupted momentarily.** | ● Is the heavy load imposed on the recorder?<br>● The HDD may have a minor error. | -<br>- |
| Copy/Archive | **Cannot operate the copy or archive device.** | ● Are the media inserted correctly?<br>● Are the cables connected correctly?<br>Check that the pins are not broken or bent.<br>● Check that the recorder is not in the middle of the media recognition process.<br>● Is the correct playback device selected?<br>● Is the overwrite-protection of the media disabled?<br>● Is the power of the external recording device on?<br>● Is the registered copy/archive device displayed on the <HDD registration> screen? | -<br>-<br><br>-<br><br>70<br>-<br>-<br>36 - 39 |
| | **Copy or archive does not start.** | ● Are the selected cameras displayed on the screen for setting the copy/archive conditions?<br>Only the cameras selected for copy (or archive) are used. When no cameras are selected, the recorder does not start copying (or archiving). | 80 - 83 |
| | **Cannot copy data to a DVD or CD.**<br><br>**[Calculation failed] appears after the test is executed.** | ● Is a proper disc that is usable with the recorder's DVD/CD drive inserted?<br>(Depending on the type of the disc to be used, due to lack of compatibility with the drive, the recorder may fail to copy data to it.) | - |
| | **Cannot copy data to a DVD or CD.** | ● Is the media compatible with the recorder?<br>● Is the disc inserted?<br>● Is the DVD/CD drive recognized properly? | -<br>-<br>- |
| Communication | **Cannot access the recorder from the personal computer.** | ● Is the <Communication setting> menu set correctly?<br>● Is the personal computer connected to the recorder correctly?<br>● Are the cables connected correctly?<br>● Are proper cables being used?<br>● Check that the IP address of the recorder and that of the personal computer are different.<br>● Is the recorder able to receive a ping command from the personal computer?<br>● Disconnect the LAN cable and leave the recorder alone for 30 minutes. Then, connect the LAN cable and perform the connection test.<br>● Turn off the MAIN switch on the rear panel and turn it on again.<br>● Do not use broken hubs or routers or damaged network cables. Otherwise, the system may not operate correctly. | 114, 115<br>24<br>-<br>86<br>114<br><br>-<br><br>-<br><br><br>20<br>- |
| | **Image refresh rate is low.** | ● Check that the recording rate is not set high.<br>This recorder uses the same compression codec for recording and communication. Depending on the recording settings, the image transfer rate for communication may become low, resulting in a low image refresh rate. In addition, images may not be attached to e-mail anymore. | 56, 97 |

| | Symptom | Where to check | Page |
|---|---|---|---|
| Search | **Date and time search does not start.** | ● Are the current date and time set accurately? | 105 |
| Others | **Cannot control the cameras via the recorder.** | ● Are the cameras to be controlled connected correctly?<br>● Are the PTZ camera settings configured correctly? | 24<br>116 |
| | **The motion detection function does not work.** | ● Check that the alarm recording trigger for the camera controlled by the motion detection is not set to [EXT].<br>● Check that the FPS rate for the alarm recording of the camera controlled by the motion detection is not set to [---].<br>● Check that the value of [MD threshold] is not larger than that of [Mask set] on the <Motion detection setting> screen.<br>● Are the detection areas set correctly?<br>● Check that [Alarm input] is not set to [Off]. | 58<br>56<br>62, 63<br>62, 63<br>65 |
| | **A blue screen is displayed in the split screen display mode.** | ● The screen for the cameras not outputting image signals are displayed in blue even when those cameras are selected for recording. | - |
| | **The buttons do not work.** | ● Check that the POWER indicator is not blinking.<br>The recorder does not work while the POWER indicator is blinking.<br>● Check that the LOCK indicator is not illuminating. | 16<br>16,117 - 120 |
| | **Cannot switch the cameras by the camera number buttons.** | ● Check that the LOCK indicator is not illuminating.<br>● Check that no menu screen is being displayed.<br>You cannot switch cameras when a menu screen is being displayed. | 16,117 - 120<br>- |
| | **Cannot configure menu settings.** | ● Check that Output B is not selected.<br>When Output B is selected, the mouse cursor is displayed but no menus are displayed and you cannot configure the menu settings. You can configure the menu settings only when Output A is selected. | 43 |
| | **The warning display saying "Camera image is lost or distorted" is issued for the cameras that are not in use for recording.** | ● Are there unnecessary cameras set for normal, alarm, or emergency recording?<br>Exclude unnecessary cameras from the recording setting. | 56, 60 |

# Error indications

When an error occurs in the recorder, it indicates the error by 2 methods as described below.

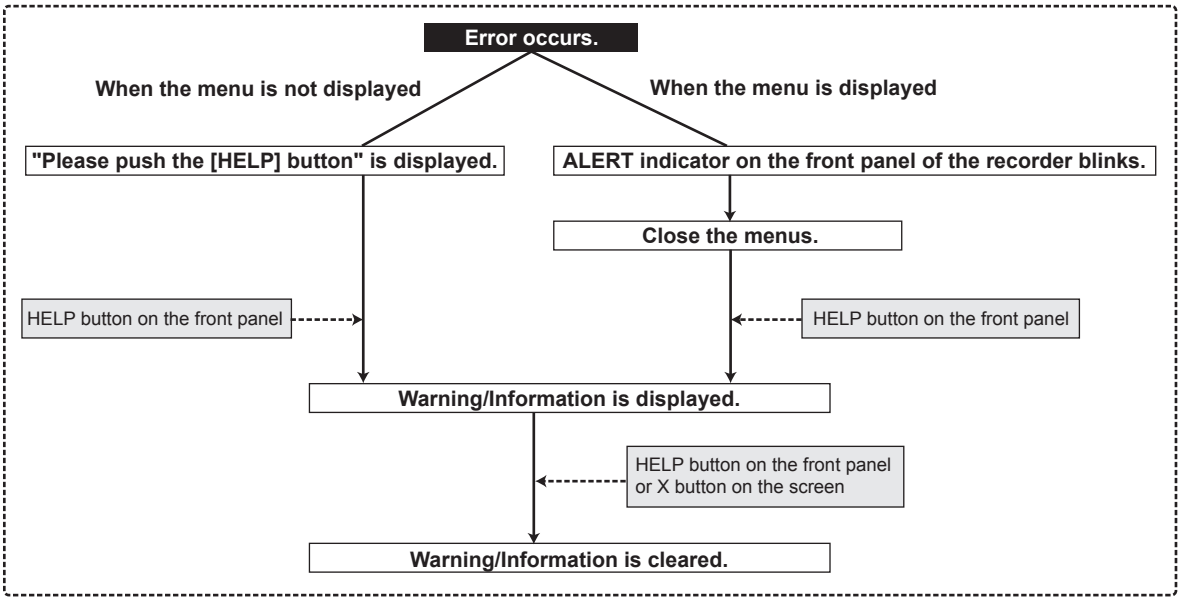
- Information .....When an error occurs, "Please push the [HELP] button" is displayed on the screen. When you press the HELP button, the information screen is displayed.

  To clear the information screen, press the HELP/WARNING RESET button on the front panel of the recorder or the [X] button on the information screen.

- Warning .....When an error occurs, "Please push the [HELP] button" is displayed on the screen. When you press the HELP button, the details of the error are displayed.

  The recorder outputs a call-out signal or sounds a buzzer depending on the warning event. (☞ Pages 105 and 106)

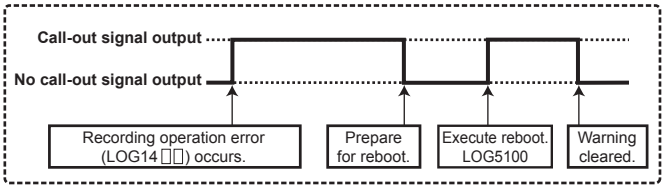
  To clear the indication, press the HELP/WARNING RESET button on the front panel of the recorder or the [X] button on the warning indication. When you clear the warning indication, the buzzer and the call-out signal output stop.


Error occurs.
When the menu is not displayed
When the menu is displayed
"Please push the [HELP] button" is displayed.
ALERT indicator on the front panel of the recorder blinks.
Close the menus.
HELP button on the front panel
HELP button on the front panel
Warning/Information is displayed.
HELP button on the front panel or X button on the screen
Warning/Information is cleared.

**Warning indication and call-out signal output**

Tips

- The recorder retains and displays the past 16 information/warning events. The older events are cleared and the call-out signal output is canceled.
- When an operation error involving reboot of the recorder such as LOG14□□ occurs while the call-out output is enabled, a call-out signal is output from the CALL OUT terminal. After that, the recorder prepares for reboot and the call-out signal output ceases. However, the call-out signal is output again after the recorder reboots (LOG5100). In this case, the call-out signal output stops when you clear the warning indication.



***1 : Call-out signal output**

Selectable : You can select to enable or disable the call-out signal output using the menu screen.

Common : Call-out signal is output from the CALL OUT terminal regardless of the menu setting.

None : No call-out signal is output, but warning is displayed on the screen.

***2 : Warning level**

Normal : Check the cause of the warning by pressing the HELP button first. By clearing the warning, you can keep using the recorder.

Minor : Check the cause of the warning by pressing the HELP button first. By clearing the warning, you can keep using the recorder. If the same warning appears frequently, contact your dealer.

Major : Contact your dealer.

***3 :** The value depends on the setting.

***4 :** Code for recording

***5 :** Code for copy

***6 :** Code for archive

***7 :** (The following numbers are displayed in □□.)

| | | | |
|---|---|---|---|
| 01 : CH 1 | 02 : CH 2 | 03 : CH 3 | 04 : CH 4 |
| 05 : CH 5 | 06 : CH 6 | 07 : CH 7 | 08 : CH 8 |
| 09 : CH 9 | 10 : CH 10 | 11 : CH 11 | 12 : CH 12 |
| 13 : CH 13 | 14 : CH 14 | 15 : CH 15 | 16 : CH 16 |

***8 :**

13□□, 14□□: Recording 23□□, 24□□: Playback

33□□, 34□□: Copy 73□□, 74□□: Archive

(The following numbers are displayed in □□.)

00 : A (Internal)

01 : B (Internal)

11 to 26 : Serial bus (Main) SBM01 to 16

31 : Serial bus (Copy) SBC01

47 : DVD/CD

48 : USB memory

51 to 66 : Serial bus (Archive) SBB01 to 16

*** About LOG14□□, 74□□**

This code is displayed when an error occurs during recording. The recorder stops its system and then resumes recording. (HDD that is not recognized correctly is automatically excluded from the recording device. The recorder continues recording until all the registered HDDs are used up.)

*** About LOG24□□ , 34□□**

These codes are displayed when an error occurs during copy or playback. Because the recorder stops its system, playback or copy stops. After that, perform playback or copy again.

**<Information>**

| Display | Code | Call-out signal output*1 | Cause | Remedy | Warning level*2 | Page |
|---|---|---|---|---|---|---|
| Copy data size error<br><br>Check the copied data range or available disk space of the copy media.<br>The media may contain data of wrong format. | LOG3701*5 | None | · The designated copy range exceeds the remaining capacity of the destination device. | · Press the WARNING RESET button on the front panel or click the [X] button on the information screen to clear the warning.<br>· Designate the copy range again. | Normal | 80-83 |
| Copy media error<br><br>Cannot copy the data.<br>Check the copy device and copy media. | LOG3702*5 | None | · A medium of incompatible format is used.<br>· The recording medium is write-protected. | · Press the WARNING RESET button on the front panel or click the [X] button on the information screen to clear the warning.<br>· Check that the copy device is registered correctly.<br>· Check that the external device is connected correctly.<br>· Check that the external device is turned on.<br>· Check that the write-protection of the medium is enabled. If enabled, disable the protection.<br>· After turning off the power of the external device and the recorder, reboot the external recording device and the recorder in order.<br>· After turning off the power of the external device and the recorder, check the cables.<br>· Replace the disc. | Normal | 80-83 |
| Archive data size error<br><br>No archive data were found.<br>Check the archive source data. | LOG7701*6 | None | · Data as designated by the archive conditions do not exist.<br>· Recording and archive are started at the same time with no data recorded in the HDD. | · Press the WARNING RESET button on the front panel or click the [X] button on the information screen to clear the warning.<br>· Check the data to be archived. | Normal | 80-83 |
| No media or media of wrong type.<br><br>Use proper media and connect it correctly. | LOG3703*5 | None | · No medium is inserted.<br>· A medium that failed copy before is inserted. | · Press the WARNING RESET button on the front panel or click the [X] button on the information screen to clear the warning.<br>· Replace the disc.<br>· Insert a disc. | Normal | 80-83 |
| Media is full of recorded data.<br>Insert a new disk into the drive. | LOG3704*5 | None | · The free space on the disc runs out. | · Press the WARNING RESET button on the front panel or click the [X] button on the information screen to clear the warning.<br>· Replace the disc. | Normal | 80-83 |

**<Information> (continued)**

| Display | Code | Call-out signal output*1 | Cause | Remedy | Warning level*2 | Page |
|---|---|---|---|---|---|---|
| Copy stopped because the copy source data were overwritten. | LOG3500*5 | None | · The data being copied or archived are overwritten. | · To continue copying/archiving, stop recording.<br>· Press the WARNING RESET button on the front panel or click the [X] button on the information screen to clear the warning. | Normal | 80-83 |
| Archive stopped because the copy source data were overwritten. | LOG7500*6 | | | | | |
| Copy source data are about to be overwritten.<br>Stop recording if you want to continue copying. | LOG3600*5 | None | · The data being copied or archived are about to be overwritten. | · To continue copying/archiving, stop recording.<br>· To continue recording, stop copying/archiving.<br>· Press the WARNING RESET button on the front panel or click the [X] button on the information screen to clear the warning. | Normal | 80-83 |
| Archive source data are about to be overwritten.<br>Stop recording if you want to continue archive. | LOG7600*6 | | | | | |
| Copy HDD error<br><br>Cannot copy the data.<br>Check the copy destination HDD. | LOG3707*5 | None | · The copy/archive destination HDD is not found.<br>· There is no free space left in the copy/archive destination HDD. | · Press the WARNING RESET button on the front panel or click the [X] button on the information screen to clear the warning. | Normal | 80-83 |
| Archive HDD error<br><br>Cannot archive the data.<br>Check the archive destination HDD. | LOG7707*6 | | | | | |
| DVD/CD drive was not found.<br>Not connected or unusable.<br><br>Connect a proper DVD/CD drive. | LOG3708 | None | · The DVD/CD drive is not connected yet or a drive of wrong type is connected. | · Press the WARNING RESET button on the front panel or click the [X] button on the information screen to clear the warning. | Normal | - |
| No USB memory was found.<br>No USB memory or unusable memory is inserted. Use proper USB memory and connect it correctly. | LOG3705 | None | · No USB memory is inserted for copying or a USB memory of wrong type is inserted. | · Press the WARNING RESET button on the front panel or click the [X] button on the information screen to clear the warning. | Normal | - |
| Menu data cannot be read out. | LOG3706 | None | · The menu data cannot be read out. | · Press the WARNING RESET button on the front panel or click the [X] button on the information screen to clear the warning. | Normal | 113 |

**<Warning>**

| Display | Code | Call-out signal output*1 | Cause | Remedy | Warning level*2 | Page |
|---|---|---|---|---|---|---|
| Remaining capacity of HDD (Normal) is running short.<br>Remain **%*3 | LOG1200 | Selectable | · The remaining capacity of the HDD reaches the value set by [Call-out]. | · Press the WARNING RESET button on the front panel or click the [X] button on the warning indication to clear the warning. | Normal | 105 |
| Remaining capacity of HDD (Alarm) is running short.<br>Remain **%*3 | LOG1201 | | | | | |
| Remaining capacity of HDD (EMR) is running short.<br>Remain **%*3 | LOG1202 | | | | | |
| Remaining capacity of HDD (Archive) is running short.<br>Remain **%*3 | LOG7200 | | | | | |
| Remaining capacity of HDD (Normal) is 0%. | LOG1100*4 | Selectable | · The free space in the HDD runs out with [Call-out] set to 0%. (It is not output when the repeat recording is enabled.) | · Press the WARNING RESET button on the front panel or click the [X] button on the warning indication to clear the warning.<br>· When the warning is cleared, the recorder overwrites data from the oldest. | Normal | 40, 105 |
| Remaining capacity of HDD (Alarm) is 0%. | LOG1101*4 | | | | | |
| Remaining capacity of HDD (EMR) is 0%. | LOG1102 | | | | | |
| Remaining capacity of HDD (Copy) is 0%. | LOG3100 | None | · The free space in the copy or archive device runs out. | · Press the WARNING RESET button on the front panel or click the [X] button on the warning indication to clear the warning.<br>· Replace the medium with a new one. | Normal | 105 |
| Remaining capacity of HDD (Archive) is 0%. | LOG7100 | Selectable | | | | |
| Recorder skipped the defect area and resumed recording. | LOG56□□*8 | Selectable | · A temporary failure or malfunction occurs in the HDD. | · Check whether the HDD has no malfunction. | Minor | - |
| Recorder resumed recording to the next HDD. | LOG57□□*8 | | | | | |
| Error was found in the external HDD.<br>Check the HDD system configuration. | LOG6500 | Selectable | · The external HDD is reset. | · Check whether the HDD has no malfunction.<br>· Turn off the power of the recorder and then turn it back on.<br>· Check the connection. | Minor | - |

**<Warning> (continued)**

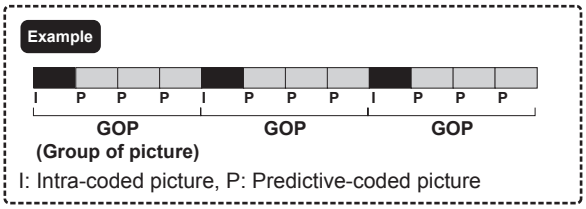
| Display | Code | Call-out signal output*1 | Cause | Remedy | Warning level*2 | Page |
|---|---|---|---|---|---|---|
| Camera image is lost or distorted.<br>Check the connections of cameras and cables.<br>□□ *7 | LOG54□□*7 | Selectable | · The video signal from the specified camera (specified for normal, alarm, or emergency recording) is lost for 2 seconds or longer. (This warning is not displayed in the case of recording not lasting for at least 2 seconds.) | · Press the WARNING RESET button on the front panel or click the [X] button on the warning indication to clear the warning.<br>· Check whether the recorder and camera are connected correctly and turned on.<br>· Check whether the video signal is being output from the camera.<br>· Check whether the cameras not outputting video signals are not selected for recording. | Minor | -<br>24<br>43<br>54-59 |
| (None) | LOG13□□*8<br>LOG33□□*8<br>LOG73□□*8<br>LOG23□□*8<br>LOG38□□*8<br>LOG78□□*8 | None | · An error occurs during writing/reading the HDD.<br>· The HDD is exposed to vibrations and shocks. | · When no abnormality is found, you can keep using the recorder.<br>· When errors occur repeatedly, check the HDD, media, and cables and reboot the recorder. | Minor | - |
| HDD error was found.<br>Check the following HDD.<br>HDD: **** | LOG61□□*8 | Selectable | · The HDD cannot be recognized. | · Check whether the HDD has no malfunction.<br>· Turn off the power of the recorder and then turn it back on.<br>· Check the connection. | Minor | - |
| HDD error was found. (Mirroring)<br>Check the following HDD.<br>HDD: **** | LOG64□□*8 | | | | | |
| Available Main HDDs were not found. | LOG6200 | Selectable | · No internal HDDs can be recognized.<br>· The external device cannot be recognized. | · Contact your dealer. | Major | - |
| Recording stopped temporarily because an error occurred in the following HDD.<br>HDD: **** | LOG14□□*8 | Selectable | · An error occurs during recording/archive. | · Check whether the HDD has no malfunction. | Minor | - |
| Archive stopped temporarily because an error occurred in the following HDD.<br>HDD: **** | LOG74□□*8 | | | | | |
| Playback stopped because an error occurred in the following HDD.<br>HDD: **** | LOG24□□*8 | Selectable | · An error occurs during playback/copy. | · Start the operation again.<br>· Turn off the power of the recorder and then turn it back on using the POWER button on the front panel.<br>· Turn off the power of the recorder and then turn it back on using the MAIN switch on the rear panel.<br>· Press the WARNING RESET button on the front panel or click the [X] button on the warning indication to clear the warning. | | |
| Copy stopped temporarily because an error occurred in the following device.<br>Device: **** | LOG34□□*8 | | | | | |
| Data that may have been altered or recorded by other recorder were found.<br>□□ *7 | LOG55□□*7 | None | · Altered data are played back.<br>· Data recorded by other than this recorder are played back.<br>· The medium or device is damaged. | · Press the WARNING RESET button on the front panel or click the [X] button on the warning indication to clear the warning. | Minor | 112 |
| Rebooted by the system recovery function.<br>Check the recorder condition. | LOG5100 | Selectable | ·The recorder is rebooted. | · Press the WARNING RESET button on the front panel or click the [X] button on the warning indication to clear the warning. | Minor | - |
| Internal temperature is high. Check the ventilation of the recorder. | LOG5200 | Selectable | · The recorder is used in a high temperature environment. | · Turn off the power and install the recorder in an environment of 5 to 40ºC. | Minor | - |
| Internal temperature is high. Stop the recorder immediately. | LOG5201 | Selectable | · The recorder is used in a high temperature environment. | · Contact your dealer. | Major | - |
| The fan stopped. Check the fan condition. | LOG5300 | Selectable | ·The fan stops. | · If the fan stops, turn off the power and contact your dealer immediately. | Major | - |
| (None) | LOG5101<br>LOG5121<br>LOG5122 | None | · The recorder is rebooted for watchdog operation or self-recovery. | - | Minor | - |
| (None) | LOG9900 | None | · The HDD management information is damaged. | - | Minor | - |

# Glossary

**MPEG4**

A standard established by Moving Picture Experts Group that specifies the technologies to encode (or to digitally convert) video and audio data.

Picture consists of intra-coded picture and predictive-coded picture as follows.




I: Intra-coded picture, P: Predictive-coded picture

**Copy/Archive**

Copy means to write a portion of recorded data stored in the recorder's HDD in other media. Archive means to copy the entire recorded data stored in the HDD to another HDD.

**Mirroring**

Mirroring is to save the exact same data in 2 HDDs during recording. Even if one HDD fails, the data are still retained.

**Repeat recording**

A function to overwrite data from the oldest when the available space of HDD runs out during recording.

**Partition**

Partition means to divide the data storage area in the HDD into several sections.

**Multiplexer**

A function to display video signals supplied from the connected cameras as one video output.

**Main device**

Main device is a HDD used for normal recording.

**Cascade function**

A function to display and switch data stored in cascade-connected recorders on the monitor connected to the master unit.

**FTP (File Transfer Protocol)**

A protocol for transferring files on the network.

**SNTP (Simple Network Time Protocol)**

A protocol for synchronizing the clocks of the personal computers on the same network using the TCP/IP network.

**FPS (Frame Per Second)**

An index representing the smoothness of video images. It indicates the number of images displayed per second.

**GOP (Group of Pictures)**

A minimum structure comprising a video image pursuant to the MPEG standard.

**Serial bus**

Used to connect a mouse, USB memory device, and external hard disk drive having a USB interface. Some commercial USB devices don't have compatibility with this recorder.

**Emergency recording**

A function to start recording triggered by external switches connected to the recorder in the event of an emergency. Images are recorded at the highest picture quality and the designated recoding rate. (The recording rate varies depending on the number of recording cameras.)

**Bookmark search**

A function to search images using pre-registered bookmarks.

**PTZ**

PTZ means panning, tilting, and zooming. PTZ cameras are turned by external control.

**Timer recording**

A function to record images according to the timer programs. For each program, you can designate the number of cameras to be used as well as the picture quality and recording rate for each camera and enable or disable the motion detection.

**Motion detection search**

A function to detect motion within the recorded image according to the pre-designated conditions. It is necessary to designate the detection areas and other settings before using this function.

**DVD (Digital Versatile Disk)**

Disc-shaped optical recording media used for recording and playback of video at high picture and audio quality and for recording data. It looks like a CD.

**Preliminary recording**

A function to start recording up to 30 minutes prior to the start of alarm recording or emergency recording.

**CALL OUT**

Terminals for outputting signals to inform of occurrence of a failure or abnormality in the system.

**MODE OUT**

Terminals for outputting signals to inform of the recorder's operation mode. You can check the status of these terminals via network.

**Triplex playback**

A function to display live video supplied from the cameras and playback video at the same time while live video is being displayed in the split screen mode on the monitor.

# Specifications

Rated Power Supply.....100 to 240 V AC, 50/60 Hz
Rated Input.....0.9- 0.4 A (100-240 V)
Colour System.....NTSC-type colour system

Operating Temperature.....41 °F-104 °F (5 °C to 40 °C)
Relative Humidity .....Max. 80 (%)
Altitude .....Max. 2000 (m)

Dimensions.....425 (Width) x 375 (Depth) x 133 (Height) (mm)
Weight .....10.4 kg (when 1 HDD is attached)
11.1 kg (when 2 HDDs are attached)

Recording System .....Digital recording system
Sampling .....13.5 MHz
Data Compression .....MPEG4
Compression Unit.....Frame, Field
Recording Resolution .....704 x 480, 704 x 240, 352 X 240
Recording Device .....Hard disk drive (HDD)
Audio Recording System.....AD-PCM system

Video Input .....16 Input BNC-Connectors: 1.0 V(p-p), 75 ohms.
Monitor Output.....S-Connector: Y-Signal: 1.0 V(p-p), 75 ohms.
C-Signal: 0.286 V(p-p), 75 ohms.
2 Output BNC-Connectors: 1.0 V(p-p), 75 ohms.
RCA-jack: 1.0 V(p-p), 75 ohms.
XGA
Throughout Output .....16 Output BNC-Connectors: 1.0 V(p-p), 75 ohms.
Cascade Video Input .....BNC-Connector: 1.0 V(p-p), 75 ohms.
Cascade Video Output .....BNC-Connector: 1.0 V(p-p), 75 ohms.

Audio Input .....RCA-Jack: 308 mV(rms), 50 k ohms.
Audio Output .....RCA-Jack: 308 mV(rms), 1 k ohms.

Clock .....±20 seconds/month (when power is supplied, 25 °C)

Timer Program.....16 programs-Daily start and stop time for one week x 1 set
Memory Backup .....Lasts for more than 1 month (when fully charged)

Connectors
External storage terminal ...Serial bus (1-4) (For connecting the recommended optional items only)
Control terminals
Emergency Input.....Active: When terminals are short-circuited or “Low” Level voltage is applied.
Non active: Open.
EVENT (1-3) .....Active: When terminals are short-circuited or “Low” Level voltage is applied.
Non active: Open.
Mode out (1-4) .....Active: “Low” Level Max. Drive current 30 mA DC.
Non active: Open. Max. Voltage 24 V DC.
Call out +/–.....Active: Short Max. Drive current 7 mA DC.
(Photo coupler output) Non active: Open. Max. Voltage 24 V DC.
Ground terminal
DC 12 V Output.....Max. 350 mA DC (when Main switch and power button is turned on)
CLOCK ADJ IN .....Active: When terminals are short-circuited or “Low” Level voltage is applied.
Non active: Open.
CLOCK ADJ OUT .....Active: “Low” Level Max. Drive current 30 mA DC.
Non active: Open Max. Voltage 24 V DC.
(CLOCK ADJ OUT is a through output terminal of CLOCK ADJ IN.)
Alarm Input.....Active: When terminals are short-circuited or “Low” Level voltage is applied.
Non active: Open.
Alarm output.....Active: “Low” Level Max. Drive current 30 mA DC.
Non active: Open Max. Voltage 24 V DC.
CONT OUT.....Modular jack 4 pins
RS-485 .....Input/Output terminal RJ-45
PTZ terminal.....RS-232C terminal
RS-422 terminal
Serial port.....RS-232C D-SUB 9 pin
Communication
LAN .....Connector form: RJ-45 Physical interface: 10BASE-T/100BASE-TX

DVD-R/RW, CD-R/RW recording format .....Original format

Accessories .....AC power cord 1
CD 1
Cable clamping band 2
Installer’s manual (this manual) 1
User’s manual 1
Recording time table 1

Weight and dimensions shown are approximate.
Design and specifications are subject to change without notice.

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